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IN THE

Supreme Court of the United States

OCTOBER TERM, 1973

No. 73-1705

WOODRUFF AND SONS, INC. AND ROY J. WOODRUFF,
Petitioners,

vs.

LASER ALIGNMENT, INC. AND CONTRACTORS AUTOMATED DEVICES, INC.,
Respondents.

PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE SEVENTH CIRCUIT

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Petitioners pray that a writ of certiorari issue to review the judgment of the United States Court of Appeals for the Seventh Circuit entered in the above case on January 22, 1974.

OPINIONS BELOW

The Memorandum Opinion dated March 19, 1971 and the Findings of Fact and Conclusions of Law entered on December 30, 1971 by the District Court for the Northern District of Indiana were not reported. A copy of each is appended to this petition (Appendix page A1 and page A26). The opinion of the Court of Appeals for the Seventh Circuit is reported at 491 F. 2d 866, and a copy thereof is appended to this petition (Appendix page A46).

JURISDICTION

The Opinion of the Court of Appeals for the Seventh Circuit was made and entered on January 22, 1974. A Petition for Rehearing was denied by the Court of Appeals for the Seventh Circuit on February 15, 1974. The jurisdiction of this Court is invoked under 28 USC 1254(1).

QUESTIONS PRESENTED

1. May a patent owner successfully sustain a charge of infringement against one who uses a purported "equivalent" which was completely unknown until years after the date of the invention and application, which was discovered only shortly before the formal grant of the patent, and which was not known by the patentee before the patent grant?

2. Is a patent entitled to the same scope sought in the applicant's original claims notwithstanding numerous changes made during prosecution of the application to insert limiting language to overcome prior art references cited by the Patent Office; more specifically, is the doctrine of file wrapper estoppel not still a viable doctrine of law?

STATEMENT OF THE CASE

This is an appeal in an action brought in the District Court for the Northern District of Indiana by Laser Alignment, Inc. and Contractors Automated Devices, Inc. against Defendants Woodruff and Sons, Inc., an Indiana corporation, and Roy J. Woodruff, a citizen of Indiana, for infringement of a patent.

Federal jurisdiction is based on 28 USC 1338(a). The patent is entitled "Method and Means For Laying Sewer Pipe", and the claims in suit relate solely to a method for performing that operation.

The method entails a series of steps wherein a collimated narrow beam of light is projected along a chosen line at selected grade or inclination and a first pipe to be laid is positioned in close proximity to the light projector and in coaxial alignment with a light beam from the projector. A target with a translucent portion and projecting handles is then rigidly coupled with the end of the pipe remote from the light source. The target is viewed to observe whether the light beam impinges on a mark at the center of the translucent target portion. The target includes a light shield and a mirror to permit observance of the point of impingement of the collimated light beam upon the translucent part of the target which is protected from ambient light by the light shield. The user looks directly into the light beam as it is reflected by a mirror and adjusts the position of the target-carrying end of the pipe into coaxial alignment with the light beam by grasping the handles of the target and shifting the target to thereby move the pipe. The target is removed from the first pipe and rigidly coupled with succeeding pipe sections and is used in the same manner to check alignment as the pipe laying operation proceeds.

The light beam disclosed in the patent was one of a type known when the application for the patent was filed, namely, a beam of white light.

Neither Plaintiffs nor Defendants use the method described in the patent. Both parties use a laser beam instead of a beam of light. Neither Plaintiffs nor Defendants use a target requiring the user to look directly into the laser beam or into a reflection thereof. The Defendants' method also entails the use of a target which is free to move in the pipe; movement of the pipe directly, rather than moving the target as a means to move the pipe; and does not require the use of a light shield to exclude ambient light. In some instances, Defendants remove the target from the last pipe section being laid after initial observance of the light beam impingement thereon and during movement of the last pipe section toward alignment and then reinsert the target to check the adjusted position of the last pipe.

The laser had not been invented in 1957 when the application for the patent in suit was filed, and it did not become available to the public until 1963 or 1964, and was little known until 1965. The inventor did not know of the laser until after the patent was granted. The laser produces a high intensity, highly directional light, whereas the directional properties of ordinary or white light depends upon optics. The laser produces a light so intense that a person cannot look into a laser beam for thirty seconds without eye damage. Lasers generate a force of a new type. They are used for various purposes, such as cutting steel, eye surgery, signalling, and determination of line and grade in construction work.

The District Court held that the claims of the patents in suit were not infringed by Defendants' method because of the differences between the steps or actions practiced by Defendants, and the steps specified in the patent claim, as limited during prosecution of the application for the patent in the Patent Office, and because of the differences in the properties and usage of a laser beam as compared to those of a collimated beam of white light.

Plaintiffs appealed to the Court of Appeals on the issue of infringement and Defendants appealed to the Court of Appeals on the issue of validity. The two appeals were consolidated. The Court of Appeals for the Seventh Circuit affirmed the District Court on the issue of validity of the patent and reversed on the issue of infringement.

REASONS FOR GRANTING THE WRIT

1. The petition brings before the Court an important question of patent interpretation which has not been and should be settled by this Court.

2. The decision of the Court of Appeals for the Seventh Circuit affects the entire industry of laying sewer pipes, constructing tunnels, and other pipe lines. It enables the Plaintiffs

as owners and exclusive licensees of the patent in suit to levy tribute upon the pipe laying industry for the use of a laser not invented by the patentee, by procedures not contemplated or taught by the patentee. It deprives the general public of an important usage of a laser invented subsequent to the date of invention and application for the patent.

3. There is a clear conflict between the decision of the Court of Appeals for the Seventh Circuit and the decision of the Court of Appeals for the Third Circuit in *American Chemical Paint Co.* v. *J. G. Brill Co.*, 99 F. 2d 602 (3 Cir. 1938).

4. The Court of Appeals applied a legal interpretation to the patent claims which extended their scope far beyond their clear language and in direct conflict with the rules of construction laid out by the Supreme Court in *Exhibit Supply Co.* v. *Ace Patents Corp.*, 315 U.S. 126, in which this Court last spoke to the doctrine known as "file wrapper estoppel".

5. The public interest in reasonable certainty as to the legal principles involved in the construction and interpretation of patent claims renders it important that this Court consider the questions presented by this petition.

ARGUMENT

I.

The Trial Judge recognized the inequity of Plaintiffs' attempt to pre-empt the use of a laser in a light beam method of laying sewer pipe when the laser was not known at the date of patentee's invention and patent application and the patentee had no knowledge of the laser, or its properties, or its utility, at the time he filed his patent application or at the date the patent was granted, just as the Patent Office would have denied the applicant the right to amend his application to refer to the laser after the laser was invented. The Trial Judge cited in support of his position *Gill* v. *Wells*, 22 Wall 1, 28, 29; 22 Law Ed. 699, 711, 712; *Fuller* v. *Yentzer*, 94 U.S. 288, 297, 298, 24

Law Ed. 103, 106, 107; and *Halliburton* v. *Walker*, 329 U.S. 1, 13, 91 Law Ed. 1, 11. In reaching this conclusion of non-infringement the Trial Judge had the benefit of comparative demonstrations of the laser and white light in a hallway adjoining the courtroom and observed the Defendants' method of laying sewer pipe by the use of a laser in the field. From the testimony and demonstrations, the Trial Judge realized the differences between the accused method using a laser beam and the patented method using a collimated beam of white light, and he recognized that the laser could not be considered to be the equivalent of a white light beam in a method of laying sewer pipe.

The Court of Appeals disregarded these fact findings, and, in particular, disregarded the date of the invention of the laser subsequent to the filing of the application for the patent in suit in considering the issue of the equivalence of a laser beam and a collimated beam of white light. To do so, the Appellate Court engaged in speculation of the meaning of the words "not known at the date of the Letters Patent" used by the decision in this Court in *Seymour* v. *Osborn*, 78 U.S. 516, 555-556 (1871), saying:

> "It appears to us that the Court clearly intended to adopt the theory that he who would deny a charge of infringement on the basis of the newness of the substituted element must have utilized an element that was not known as a proper substitute at the date the patent claims were staked out in the public domain, i.e., at *the date the patent was no longer pending but was granted.*" (Emphasis added.)

The Court of Appeals reached this conclusion after having stated previously:

> "We recognize, of course, that for the purpose of priority of invention the effective date of a patent is the filing of the application. See, E. G. Alexander Milburn Co. v. Davis Bournonville Co., 270 U.S. 390 (1926)."

Thus the Court of Appeals applied a *double standard* of judgment, using the date of application as a basis for judging priority and validity of a patent as compared to the prior art, and using the date of issue of the patent in considering the state of the art to determine whether equivalence exists to justify a finding of patent infringement.

This legal determination of the Court of Appeals that a substituted element is a proper equivalent if known at the date the patent was granted is contrary to the legal conclusion in *American Chemical Paint Co.* v. *J. G. Brill Co.*, 99 F. 2d 602 (3 Cir. 1938). Thus, we have a conflict of opinion as to the meaning of the words "known at the date of the Letters Patent" in *Seymour* v. *Osborn*, 78 U.S. 516, 555-556 and of similar language in *Gill* v. *Wells*, 89 U.S. 1 (1874); *Fuller* v. *Yentzer*, 94 U.S. 288 (1876); and *Halliburton Oil Well Cementing Co.* v. *Walker*, 329 U.S. 1 (1946) by two courts of appeal. This is an important concept with which all courts interpreting patent issues require final guidance by this Court. This issue requires resolution by this Court of the first question submitted herein.

II.

The second question presented, relating to file wrapper estoppel, is entirely distinct and separate from the first question.

We submit that the application of law by the Seventh Circuit Court of Appeals is in direct conflict with the law announced by the Supreme Court in *Exhibit Supply Co.* v. *Ace Patents Corp.*, 315 U.S. 126, 86 L. Ed. 736, 62 S. Ct. 513).

The Appellate Court concluded that certain differences between the accused method and the patented method were of no moment. In so doing, they disregarded file wrapper estoppel as clearly shown in the record of prosecution of the patent before the Patent Office (which was undisputed factual evidence).

In *Exhibit Supply Co.* v. *Ace Patents Corp.*, 315 U.S. 126, the Supreme Court last considered the doctrine of file wrapper

estoppel upon which the public relies to determine the metes and bounds of a patent grant so as to avoid a trespass or infringement. The doctrine is usually taken to mean that subject matter given up by the inventor during prosecution of his patent application in response to a rejection by the Examiner based on the prior art may not later be recaptured during court construction of a claim pursuant to litigation. Otherwise stated, limitations that narrow the patent claims to overcome a Patent Office rejection of the prior art are thereafter considered essential, and nothing infringes that does not fairly and literally include the added limitations.

In the present case one example of file wrapper estoppel is that the target used by Defendants is not rigidly coupled to a pipe, whereas the patent claims contain language, added during prosecution of the application to overcome a rejection on prior art, which require "rigid coupling" of the target to the pipe. The District Court (Findings 69 and 70 pp. A40-41) noted the absence of this feature from Defendants' practice and concluded there was no infringement for that reason (among others). Other limitations added to obtain allowance of the claims and not practiced by the Defendants include movement of the target to thereby move the pipe, observing the target screen while moving the target and pipe, and a use of the light beam to determine the setting of the first pipe as well as subsequent pipe sections.

It is submitted that such limitation of the patent claims is clearly the basis of file wrapper estoppel, and that accused methods must practice the step of "rigidly coupling" and other limiting steps for there to be an infringement.

Unfortunately, the Court of Appeals refused to recognize any estoppel, and apparently elected to rewrite the claim language of the patent. Indeed, the Court of Appeals swept aside six long years of prosecution before the Patent Office with the following remarkable statement:

> "In candor, *and although the plaintiffs by implication at least seem to say that Trice gave up something* during the arduous term of his efforts to secure his patent, we are

> struck by the fact that semantically the claims in the patent as granted are basically a rephrasing of that which had been rejected. It appears to us that what in fact happened was that *Trice weathered the storm on the sea of semantics and was finally successful in persuading the Examiner that that which Trice had rephrased in his final submission of claims was patentable as he probably should have been able to do on the initial effort.*" (Emphasis added.)

It is submitted that if the public may not rely on recourse to file wrapper estoppel in order to determine what is non-infringing, then the public's right to reasonably compete will ultimately drown in the "sea of semantics" referred to by the Court of Appeals.

If there is one principle of patent law that should be enforced in the public interest, it is the principle that there should be a *reasonable* and sound set of guide lines to determine what does, and what does not infringe.

The Appellate Court holding in the present case effectively emasculates the doctrine of file wrapper estoppel. If such a policy is countenanced, the public will be deprived of a valuable adjunct to claim interpretation, and the resulting fears will tend to strongly stifle competition and progress "in the useful arts", contrary to the Constitutional purpose of the patent system.

CONCLUSION

For the reasons stated and referred to above, it is respectfully requested that the Petition for a Writ of Certiorari be granted in this case.

Respectfully submitted,

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APPENDIX

IN THE UNITED STATES DISTRICT COURT
Northern District of Indiana
South Bend Division

LASER ALIGNMENT, INC., and CONTRACTORS AUTOMATED DEVICES, INC., *Plaintiffs,* *vs.* WOODRUFF & SONS, INC., and ROY J. WOODRUFF, *Defendants.*	Civil No. 4261

MEMORANDUM

This is an action for patent infringement brought by plaintiffs Laser Alignment, Inc., (Alignment), and Contractors Automated Devices, Inc., (Contractors), against the defendants Woodruff & Sons, Inc., (Woodruff), and Roy J. Woodruff, (Roy J. Woodruff), asserting infringement of Claims 1 and 2 of the Trice Patent No. 3,116,557 owned by Contractors and exclusively licensed to Alignment. By their answer, defendants deny the charge of infringement and allege invalidity of plaintiffs' patent as well as misuse and counterclaim with the same assertions.

The patent in suit issued 7 January 1964 is titled "Method and Means for Laying Sewer Pipe." Its introductory line states: "This invention relates to a method and means for laying out a sewer pipeline and more particularly to a method and means for laying said pipeline on a selected grade line by resort to establishing a light beam line of reference."

This Court has jurisdiction of the parties and subject matter in this cause under 35 U.S.C. § 281 and 28 U.S.C. § 1338(a).

Following a lengthy trial to the Court, the issues have been thoroughly and exhaustively briefed by counsel and the matter is now ripe for decision.

After a careful and thorough study of all the issues involved, the Court finds said Patent No. 3,116,557 to be valid but not infringed by the defendants and, also, finds against defendants on their counterclaim charging plaintiffs with misuse.

Background

For over a century underground pipelines, consisting of a plurality of pipe sections, have been laid by time-consuming and often inaccurate methods. The most widely-used of these methods has involved the batterboard string line method in which a plurality of spaced boards are each supported by one or more stakes driven into the ground along the sides of the trench in which the pipe is to be laid, the stakes (with the boards supported thereby) being spaced at specified intervals along the trench. Batterboards are then mounted on the stakes at a predetermined elevation and level. Between the batterboards at least one string is strung following a course determined by a plurality of stakes or so-called "hubs" which are placed by a surveying crew previous to the pipe-laying operation. The string provides a reference line from which the position of the pipe invert axis (the axis located at the lowest imaginary line inside the pipe) can be determined and according to which the pipes can be laid in proper vertical grade and horizontal alignment (PX 57-Photo PX 152A).

The batterboard string line method lent itself to inaccuracy resulting from possible human error in calculations required for locating each batterboard and string, the positioning of the grade rod, and sighting for grade. Additional problems arose because the placing of the batterboards often conflicted with the stacking of the excavated dirt or the positioning of back filling machinery.

In 1951-52 James R. Trice, Jr., (Trice), entered into the business of renting equipment and excavating ditches for plumbers and eventually worked into the business of laying main line sewer pipe. During this time he used the batterboard method. Dismayed at the disadvantages of the batterboard method, Trice felt that there had to be a better method for laying sewer pipe. He determined that "if I was going to stay in business, I was going to have to use my head and compete rather than be able to work men harder" (R. 535). Trice considered several different ways and finally conceived the present invention. Having no experience in the field of optics, he sought expert help on how to produce a collimated beam of light smaller than the inside diameter of the pipe.

Trice obtained some chipped optical lenses from an expert in the field and was told that he could form a collimated light beam by placing the lens the exact focal length away from a light source, thereby creating parallel light rays. After some experimentation he was able to produce a narrow beam of light. After further testing Trice was able to produce a light beam projector which he mounted in the middle of a pipe on a pipe-laying job. He cut a ring-shaped target housing on which he mounted a piece of frosted glass with cross hairs thereon (PX 133). With the use of his light projector and this target, he was able to lay about four or five pipe.

Trice was convinced that he had a new method of laying pipe so he went to a patent attorney who recommended that a patent search be made. After the patent search the attorney recommended that a patent application be made. The patent application was filed 4 December 1957 and pended in the Patent Office for more than six years. During this time many of the claims of the application were rejected and were narrowed by amendment. Trice, being under the impression that he should not use the method until a patent had issued, stored his equipment in his shop until such time as a notice of allowance was received from the Patent Office in July of 1963. He then dug

out the equipment and started developing the apparatus on a full-time basis. On 7 January 1964 Patent No. 3,116,557 was granted to Trice on two method claims.

In order to finance the development, Trice sold his contracting equipment and looked for further financing. He set up a corporation by the name of Contractors Automated Devices, Inc., and after spending much of his own money in further development of his invention, sold stock in the corporation.

With this additional capital, Trice was able to manufacture several systems called the "Beam-A-Ligner" (PX 152G & H). He sold these systems to three contractors in Virginia and Delaware who successfully used the equipment and practiced the method.

About this time, Roger Roodvoets, a contractor in Grand Rapids, Michigan, became aware of a light beam being used for sewer construction. This light beam, having a laser as its source, was being manufactured by Laser Lign, Inc., of Wheeling, Illinois. Roodvoets experimented with this light beam, attempting to use it to project a beam over the top of the trench but had only limited success. He was plagued with many problems including unreliability and difficulty finding the beam in the sunlight. Roodvoets' firm experimented with this Laser Lign equipment for approximately a year and realized the method had tremendous potential but the apparatus was not capable of performing satisfactorily. Efforts were made to locate improved apparatus. In the course of this endeavor, the Laser Division of Lear Siegler, Inc., located in Ann Arbor, was contacted for the purpose of having them build a complete laser with housing and grade equipment built therein. During the negotiations for such an arrangement, Roodvoets' representatives were made aware of the Trice patent. Roodvoets, upon making a patent evaluation of the Trice patent, contacted Trice.

It was learned that Trice had in operation and had sold apparatus known as the "Beam-A-Ligner". One of these systems

was purchased from Trice for the purpose of testing the operation thereof. Approximately 200 feet of pipe was laid with the "Beam-A-Ligner" system and it was determined that the apparatus would satisfactorily perform the patented method but preferably the newly discovered laser source should be substituted for the white light source of the "Beam-A-Ligner". Alignment, which was formed by Roodvoets, entered into an agreement with Trice (PX 127), improved the equipment, particularly adapting it to a laser light source, and subsequently offered this equipment on the market.

Alignment adopted the policy of selling the equipment along with a license to practice the patented Trice method. Such policy provided that the company would not sell the entire system without a license. Licenses would also be offered to any contractor on the same terms as those licenses granted to the purchasers of Alignment's equipment (DX X-3).

The defendant, Woodruff & Sons, Inc., is a corporation engaged in the business of site development and underground construction, the latter involving the installation of sewer pipe and water mains. Woodruff is also a distributor of apparatus and equipment for laying sewer pipe by means of a laser beam, such equipment being known as the "Automatic Grade Light" (AGL) which is manufactured and sold by Blount & George, Inc., of Jacksonville, Arkansas.

Around November of 1963, Glen Blount and J. C. George formed the partnership of Blount & George (later formed into a corporation in 1968) for the purpose of capitalizing on an idea conceived by Blount concerning the laying of pipe with a light beam instead of the normal batterboard method. After developing such an instrument, it was the partnership's intent to obtain a patent. In early 1964 they began to experiment with lasers as the light source and built an instrument now known as the AGL. Such instrument was used in sewer construction in June of 1964. Accordingly, on 10 September 1964 Blount and George filed a patent application consisting of ten (10) claims

(PX 37). Claims 1, 2, 4, 7, 8, 9 and 10 were rejected as unpatentable on 21 January 1966 by the Patent Office, Claim 10 being rejected as unpatentable over the Trice patent. On 8 April 1966 amendments to the patent application were made by Blount and George. Thereupon, on 2 May 1966, a Notice of Allowance was granted by the Patent Office on seven (7) claims of the AGL. These seven (7) claims became patent 3,279,070 on 18 October 1966 (PX 38).

The defendants in this action first became aware of the AGL system from an article in the 17 December 1964 issue of the Jacksonville News. This eventually led to a demonstration by Blount & George and a purchase of several of the AGL systems by the defendants. Defendants then became and are presently a distributor of the AGL system as well as using the system themselves in their business of installation of sewer pipes and water mains.

On or about 8 May 1968 plaintiffs caused written notice to be given to defendants of the existence of the Trice Patent 3,116,557, of defendants' infringement thereon, and also offered defendants a license under said patent. Plaintiffs thereafter, on 30 September 1968, filed this action alleging infringement of their patent by defendants.

Validity Issue

We treat first the issue of validity of the Trice patent since a valid patent is essential to a discussion of infringement. *Novo Industrial Corporation* v. *Standard Screw Company*, 374 F.2d 824 (7th Cir., 1967), cert. denied 88 S.Ct. 51, 389 U.S. 823, 19 L.Ed.2d 75; *Scovill Manufacturing Co.* v. *Goldblatt Brothers, Inc.*, 362 F.2d 777 (7th Cir., 1966), cert. denied 87 S.Ct. 506, 385 U.S. 970, 17 L.Ed.2d 434.

The defendants, having alleged in their answer lack of infringement because of invalidity of the Trice patent, have the burden of proving such invalidity. *McKee Door Company* v.

Forest Door Company, 284 F.2d 809 (7th Cir. 1960). And such burden of proof must overcome a presumption of validity under 35 U.S.C. § 282 by clear and convincing proof. *Walt Disney Productions* v. *Fred A. Niles Communications Center*, 369 F.2d 230 (7th Cir., 1966).

Defendants allege in their answer to plaintiffs' complaint that the Trice patent is invalid for several reasons: (1) lack of novelty under 35 U.S.C. § 101 and § 102; (2) lack of invention under 35 U.S.C. § 103; (3) failure to distinctly claim the invention under 35 U.S.C. § 112; (4) failure to describe the invention under 35 U.S.C. § 112; (5) old and exhausted combination; and (6) addition of new matter in violation of 35 U.S.C. § 132.

1. Lack of Novelty Under 35 U.S.C. § 101 and § 102

In order to invalidate the Trice patent under this concept, the defendants must prove that no novelty exists in the Trice patented method. Novelty does not exist and a device is not patentable if it has been anticipated by a substantially identical prior device in which the elements do substantially the same work in substantially the same way. In order to have anticipation of an invention, all the elements of the patented device or their equivalents must be found in a single prior device. *Amphenol Corporation* v. *General Time Corporation*, 397 F. 2d 431 (7th Cir., 1968). Further, a patent may not issue on a disclosure merely because it does an old thing in a different way, but it must disclose something which is new in the art and which amounts to something more than the result of mere mechanical skill. *H. W. Gossard Co.* v. *Loerber's Inc.*, 114 F.2d 166 (7th Cir., 1940), cert. denied 61 S.Ct. 450, 312 U.S. 680, 85 L.Ed. 1119. Accordingly, a method can only lack novelty if there is or has been a similar prior art method. *National Slug Rejectors* v. *A. B. T. Mfg. Corporation*, 164 F.2d 333 (7th Cir. 1947), cert. denied 68 S.Ct. 459, 333 U.S. 832, 92 L.Ed. 1116.

As will be seen in the next section dealing with invention under 35 U.S.C. § 103, we find that the Trice patent does

satisfy the requisite of novelty and is not anticipated by any single prior art cited by defendants in the trial of this cause.

2. Lack of Invention Under 35 U.S.C. § 103

The United States Supreme Court in *Graham* v. *John Deere Co.*, 86 S. Ct. 684, 383 U.S. 1, 15 L.Ed.2d 545 (1966) has set forth in explicit language the "basic factual inquiries" which must be made by a court in determining whether § 103 is satisfied, at Page 17:

> Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or non-obviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or non-obviousness, these inquiries may have relevancy.

In order to overcome the presumption of validity of the Trice patent by showing such patent as obvious, defendants introduced into evidence as prior art four (4) publications (DX C-1 to C-4) and twenty-one (21) patents (DX B-1 to B-21). Of these, George N. Robillard, as expert witness for the defendants, discussed at trial fourteen (14) of the patents which he deemed relevant to the method disclosed in the Trice patent (R. 1725) (DX B-1, B-3, B-4, B-5, B-7, B-8, B-10, B-13, B-14, B-15, B-16, B-17, B-19 and B-20) and the four (4) prior art publications. Defendants, in their post-trial brief on the issue of validity, discussed in some detail fifteen (15) of the prior art patents (DX B-1, B-2, B-3, B-4, B-5, B-7, B-8, B-10, B-13, B-14, B-15, B-16, B-17, B-19 and B-20) and the four (4) prior art publications. Mr. Robillard at trial admitted that no one prior art patent anticipated Claim 1 of the Trice patent

(R. 1826) but rather combining art was needed. The following prior art combinations were cited by Mr. Robillard as meeting Claim 1 of the Trice patent: (1) British patent DX B-14, Neymeyer DX B-8 and Johnson DX B-10; and (2) British patent DX B-14 and German patent DX B-17 (R. 1827-1843).

In order for any of the above prior art, either singly or in combination, to invalidate the Trice patent, the difference between that patent and the prior art must be such that the subject matter of the patent as a whole would have been obvious to a person having ordinary skill in the art to which the patent pertains, as of the date of the invention. *Walt Disney Productions* v. *Fred A. Niles Communications Center, supra.* Further, whether prior arts are analogous depends upon the similarity of their elements and purposes. *Aerotec Industries of California* v. *Pacific Scientific Company*, 381 F. 2d 795 (9th Cir., 1967), cert. denied 88 S.Ct. 788, 389 U.S. 1049, 19 L.Ed.2d 843; *B & M Corp.* v. *Koolvent Aluminum Awning Corp. of Ind.*, 257 F.2d 264 (7th Cir., 1958).

Treating first those prior art patents not cited by Mr. Robillard as relevant to the method disclosed in the Trice patent, we note the following: (DX B-6; Johnson 2,285,281—apparatus for surveying articles of manufacture; B-9: Hunter 2,436,892—method and apparatus for aligning machinery; B-11: Smith 2,729,897—instrument for transferring survey reference points; B-12: French patent 838,806—process of optical setting of mechanical assemblages; B-18: Williamson 1,296,248—track leveling sight; and B-21: Reading 2,570,275—coordinate setting machine and measuring apparatus). After a careful consideration of the above prior art references, we find that they neither alone nor in combination with any of the other prior art references cited by defendants anticipate under 35 U.S.C. § 103 the Trice patent.

We deal next with the remaining prior art references cited by defendants (DX B-1 to B-5, B-7, B-8, B-10, B-13 to B-17, B-19, B-20, and C-1 to C-4). It is defendants' contention that

DX B-4, B-5, B-7, B-8, B-14, B-15, B-20 and C-1 is prior art exemplifying optical methods of aligning objects by projecting a collimated beam of light in a selected direction to be observed upon a target thus making the Trice patent obvious and anticipated.

DX B-4 (Patton 2,198,836) discloses an apparatus patent for checking the alignment of drill piping used in drilling oil wells and uses as a source of light a conventional flashlight which merely illuminates a beaded target so that the position thereof can be observed by looking through the telescope. DX B-5 (Morgan 2,198,837) is a method and apparatus for determining the deviation betwen the contour of the inside of the bored hole of a tube with reference to the geometrical axis of the tube and in which a telescope is used to sight a scale merely illuminated by an electric globe. DX B-7 (Kinney 2,376,700) discloses a center finder for tunnel excavations in which a flashlight is mounted in a tunnel not to align an object but merely to project a light beam in a selected direction for locating a center point on the end wall of a tunnel structure to determine the accuracy of the tunneling. DX B-14 (British patent 732,445) reveals an apparatus relating to optical devices for testing centering, coaxiality and alignment. The workings of this patent show that the light L is shone downward onto the prism P whereby light rays are reflected to illuminate the reticle R on which is superimposed an image A in Figure 1. In another constructional form of the patent, Figure 3, a collimated beam of light is not projected onto a target A as defendants state; rather, the image of A is reflected on a plane approximately at the reticle R. DX C-1 (October 1892 issue of *Transactions of the American Society of Civil Engineers,* article entitled "A Method of Tunnel Alignment") describes a method whereby a lamp mounted on a gauge board held upon the end wall of a tunnel was sighted with a telescope or the naked eye to guide the work of digging the tunnel. No collimated beam of light is involved. The remaining prior art

allegedly exemplifying optical methods of aligning objects by projecting a collimated beam of light (DX B-8: Nemeyer 2,407,845—aligning device for tools; DX B-15: German patent 267,157—axis fixation by means of searchlights; and DX B-20: Armitage 2,342,828—method and apparatus for aligning machine elements and the like) were all cited and considered by the Patent Office when ruling on the Trice patent. We fail to find that these patents in any way impair the strengthened presumption of validity which accompanies a patent when prior art references cited by a defendant are in fact considered by the Patent Office before granting the patent. *Ekstrom-Carlson & Co.* v. *Onsrud Machine Works, Inc.*, 298 F.2d 765 (7th Cir., 1962), cert. denied 82 S.Ct.1160, 369 U.S. 886, 8 L.Ed.2d 287. After a careful consideration of these prior art references (DX B-4, B-5, B-7, B-8, B-14, B-15, B-20 and C-1), it is the opinion of this Court that they do not, either alone or in combination, make obvious to one reasonably skilled in the art nor anticipate the Trice patent.

Defendants further cite, along with other patents already discussed herein, DX B-16, B-17 and B-19 as disclosing optical methods of aligning tubular objects or pipes by projecting a collimated beam of light through the pipe for impingement upon a target as a guide to adjust the position of the tubes. DX B-16 (German patent 307,257) discloses a device for aligning the partial pieces of multi-part bodies (torpedo tubes, etc.) in which a light is viewed through apertures as a line of sight, not as a projected collimated beam of light. Defendants' own expert witness, Mr. Robillard, testified that DX B-16 does not involve a projected collimated beam of light (R. 1853). This patent also was considered by the Patent Office when ruling on the Trice patent. DX B-17 (German patent 868,792) shows a process whereby a measuring instrument (telescope with cross hairs) is placed in the pipe axis at the end of a last placed pipe to check the actual position of the pipe axis with respect to the specified total axis. This patent plainly

does not provide a light source projecting a collimated beam of light. DX B-19 (Cook 2,079,791) reveals an optical method of checking the alignment of a machine tool by the use of a lamp to illuminate a target at one end of an object to be aligned in order that a telescope at the other end may sight the target through two tubular members. The light source does not project a beam of light through the tubes, rather one looks through the tubes to observe the target. It is to be noted that the Cook patent was also considered by the Patent Office in ruling on the Trice patent. After a careful consideration of these prior art references (DX B-16, B-17 and B-19), this Court finds that they do not, either singly or in combination with other prior art references, anticipate or make obvious the Trice patent.

Defendants cite, along with other patents previously discussed herein, DX B-1, B-3, B-10, B-13, C-2, C-3 and C-4 as disclosing optical methods of aligning objects. DX B-1 (Kinkead 685,455—instrument for hanging and lining up shafting), DX B-3 (Nielsen 1,602,698—shaft adjusting tool) and DX B-13 (British patent 496,541—improvements in and relating to the alignment of the structural components of jigs and workpieces) all disclose apertured targets and a sighting means through which the operator looks at light piercing such targets to determine alignment. DX B-10 (Johnson 2,475,618—reflecting bore sight) discloses an apparatus to orientate the bore sight of anti-aircraft guns whereby a peep sight with cross wires inserted in the bore of the gun is viewed in a mirror. This patent was also considered by the Patent Office in ruling on the Trice patent. DX C-2 (May 1954 issue of *The Engineer*, article entitled "Interferometric Alignment Set") and DX C-3 (March 1955 German issue of *De Ingenieur*, article (as translated) entitled "Applicability of a Precision Alignment Method") are cited as prior art by defendants as discussing the checking of alignment by projecting a light beam in a desired direction for use as a reference. These publications relate to a system

of establishing a complicated fringe pattern by interference bands and observing such patterns. No targets are involved but rather the patterns of light are viewed through eyepieces. DX C-4 (May 1941 issue of *Civil Engineering*, article entitled "Precise Alignment of Sag-Wire and Optical Methods") involves light bulbs being viewed through a slit with a telescope. Again no target is involved. After a careful consideration of this prior art (DX B-1, B-3, B-10, B-13, C-2, C-3 and C-4), we clearly find that these patents and publications alone could not anticipate or make obvious the Trice patent. Nor could they in combination with any of the other prior art cited by defendants anticipate or make obvious the Trice patent to one reasonably skilled in the art.

The only prior art not yet discussed is DX B-2 (Dixon 1,035,426—device for examining the interior of pipes) which merely discloses a means whereby a light illuminates the inside of a pipe in order that a telescope may be used to inspect the interior of such pipe for damage. We find that this prior art reference, neither alone nor in combination with any other prior art references cited by defendants, anticipates or makes obvious the Trice patent.

It is evident from this discussion of the prior art references cited by defendants that none of them alone anticipate or make obvious the Trice patent (defendants' expert witness so testified, R. 1826). As mentioned earlier, the only attempt made by defendants during the trial of this cause to combine any of the prior art was during the testimony of Mr. Robillard. And even this was in actuality elicited by plaintiffs' counsel during cross-examination of Mr. Robillard. These prior art combinations are: (1) British patent DX B-14, Nemeyer DX B-8 and Johnson DX B-10; and (2) British patent DX B-14 and German patent DX B-17.

Defendants argue that the Trice patent would be obvious from use of the projector of DX B-14 together with the target of the type of DX B-8 if such target were provided with a

target housing as taught by DX B-10. From Mr. Robillard's expert testimony on this combination (R. 1827-1843), it was elicited that this combination does not provide the concept as found in the Trice patent of removing a target from one end of a sewer pipe and inserting it in the end of the next sewer pipe to be laid (R. 1840-41). Further, we do not read DX B-14 as providing the type of projection as required in the Trice patent ("Projecting a collimated narrow beam of light from said source position along the selected axis . . . (to) intercept with said target screen . . . .") since the light source in DX B-14 merely illuminates the reticle and does not intercept with a target. Also, Mr. Robillard admitted (R. 1841) that this combination would not suggest the concept of "serially laying other pipe sections in coaxial alignment with said selected axis" as found in the Trice patent claims. After a thorough consideration of the combination of prior art comprised of British patent DX B-14, Nemeyer DX B-8 and Johnson DX B-10, we find that such combination does not anticipate or make obvious the Trice patent.

Another combination which defendants argue is that of British patent DX B-14 and German patent DX B-17. It is urged by Mr. Robillard that DX B-17 adds the concept of "coaxial alignment" (R. 1843). Even with the addition of DX B-17, we fail to find this combination of any support in overcoming the presumption of validity of the Trice patent.

Admittedly, many of the twenty-one (21) prior art patents cited by defendants were not before the Patent Office when dealing with the Trice patent application. We recognize the fact that there is no presumption of validity as against prior art not before the Patent Office during the prosecution of a patent application. *Skirow* v. *Roberts Colonial House,* 361 F.2d 388 (7th Cir., 1966). Nevertheless, the presumption of validity does attach when the prior art references not before the Patent Office are equivalent to those before the Patent Office. *American Needle & Novelty Co.* v. *Schuessler Knitting Mills,*

258 F. Supp. 98 (N.D.Ill., 1966). Most of the prior art references cited by defendants in this cause disclose nothing more pertinent than that considered by the Patent Office. Those that find no equivalency are such weak prior art references that they are completely irrelevant to the Trice patent method. It is also worthy of note that a large quantity of prior art references is often a reflection of non-obviousness. *Minneapolis-Honeywell Reg. Co.* v. *Midwestern Inst., Inc.*, 298 F.2d 36 (7th Cir., 1961).

3. Failure to Distinctly Claim the Invention under 35 U.S.C. § 112

4. Failure to Describe the Invention under 35 U.S.C. § 112

35 U.S.C. § 112 requires:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.
>
> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention. A claim may be written in independent or dependent form, and if in dependent form, it shall be construed to include all the limitations of the claim incorporated by reference into the dependent claim.

The requirements of 35 U.S.C. § 112 serve two primary purposes: (1) that those skilled in the art may be able to understand and apply the teachings of the invention, and that experimentation not be discouraged by creation of an area of uncertainty as to scope of the invention, and (2) that protection

be accorded to valid patents. *Corning Glass Works* v. *Anchor Hocking Glass Corp.*, 374 F.2d 473 (3rd Cir., 1967), cert. denied 88 S.Ct. 65, 389 U.S. 826, 19 L.Ed.2d 80; *Jones Knitting Corporation* v. *Morgan*, 361 F.2d 451 (3rd Cir., 1966). Further, the claims of a patent may be interpreted in light of its specifications and drawings. *United States* v. *Adams*, 86 S.Ct. 708, 383 U.S. 39, 15 L.Ed.2d 572 (1966); *Barrett* v. *United States*, 405 F.2d 502 (Ct. Cl., 1968); *Minnesota Mining & Mfg. Co.* v. *Technical Tape Corp.*, 309 F.2d 55 (7th Cir., 1962).

Defendants basically complain that the claims of the Trice patent are indefinite because "no one skilled in the art could understand why he should place a pipe in axial alignment with the light beam and then proceed to install a target and move the pipe from its first coaxial aligned position and reestablish it in the same coaxial alignment with the light beam." We find no merit in defendants' allegation of failure to comply with 35 U.S.C. § 112. As stated by W. Brown Morton (R. 1039-41), expert witness for plaintiffs, when a patent term ("coaxial alignment") is given two meanings by a party, one being rational and the other making no sense in light of the patent, the rational meaning is naturally to be assumed by those skilled in the area of the patent in question. In light of the evidence in this case and the nature of the invention, we accept the rational meaning of "coaxial alignment" as alignment of a pipe by first aligning the spigot end and later aligning the bell end and believe the description of such in the Trice patent is in accordance with 35 U.S.C. § 112. *Reeves Brothers, Inc.* v. *U. S. Laminating Corp.*, 282 F. Supp. 118 (E.D.N.Y., 1968).

5. Old and Exhausted Combination

In light of our discussion of the prior art cited by defendants, we find no further need to belabor discussion of this issue. Defendants' allegation that the claims of the patent in suit are directed to an old combination is completely without merit.

6. Addition of New Matter in Violation of 35 U.S.C. § 132

35 U.S.C. § 132 provides in part that "No amendment shall introduce new matter into the disclosure of the invention."

It is defendants' contention that plaintiffs introduced new matter to their patent claim by means of amendment, referring specifically to Column 5, Lines 39-52 of the Trice patent which describe the steps of the method for positioning the first pipe section (PX 56, p. 51).

Amendments to applications are permitted for the purpose of clarity, *Helms Products* v. *Lake Shore Manufacturing Co.*, 227 F.2d 677 (7th Cir., 1955), and implicit in the action of the Patent Office in permitting an amendment is a determination that the amendment does not contain new matter and such determination is presumptively correct. *Reeves Brothers, Inc.* v. *U. S. Laminating Corp., supra.* Having reviewed the file wrapper of the Trice patent (PX 56), we find that no new matter was added contrary to 35 U.S.C. § 132 with the 28 September 1960 amendment by plaintiffs (Column 5, Lines 39-52 of the Trice patent).

Infringement Issue

The plaintiffs allege that Claims 1 and 2 of their patent are infringed by the defendants' accused device. Inasmuch as Claim 1 is similar to Claim 2, all of the arguments, remarks and findings directed to Claim 1 are also intended to encompass and apply to Claim 2 for the purposes of this opinion.

The claim or claims of a patent measure its grant, *Milcor Steel Co.* v. *Fuller Co.*, 62 S.Ct. 969, 316 U.S. 143, 86 L.Ed. 1332 (1942), accordingly, in determining whether an accused device infringes a valid patent, resort must be had in the first instance to words of the claim, and if the accused device falls clearly within the claim, infringement is made out. *Graver Tank Co.* v. *Linde Air Products Co.*, 70 S.Ct. 854, 339 U.S. 605, 94 L.Ed. 1097 (1950). The test of infringement is found in the so-called "doctrine of equivalents". This doctrine holds

that if two devices do the same work in substantially the same way, and accomplish substantially the same result, they are the same, even though they differ in name, form, or shape. *Graver Tank Co.* v. *Linde Air Products Co., supra; Ortman* v. *Maass,* 391 F.2d 677 (7th Cir., 1968). Emphasis is put not merely on substantial identity of result but also substantial identity of means. *Universal Match Corp.* v. *New Castle Products, Inc.,* 308 F.2d 842 (7th Cir., 1962). This doctrine does not excuse the omission of an essential element of a claim; it merely holds that the substitution of an "equivalent" for an essential element does not avoid infringement.

After a careful and exhaustive review of all the evidence on the issue of infringement in this cause, it is the opinion of this Court that defendants' accused device does not infringe the Trice patent.

Defendants have raised numerous challenges to the allegation of infringement, i.e., (1) light beam intensity; (2) means of setting first pipe section; (3) projection of light beam on target; (4) targets; and (5) file wrapper estoppel. We need treat only the first of the above to find non-infringement.

1. Light Beam Intensity

Defendants contend that the laser beam they employ in their device is not a "collimated narrow beam of light" as required in Claim 1 of the Trice patent (Column 6, Lines 18-19).

As noted in the background on this case, the Trice patent originally used a non-laser collimated beam of light as a light source. In fact, the laser beam was not known until several years after the filing of the Trice patent application. Mr. Roodvoets, upon learning of the Trice patent having issued in 1964, and after entering into an agreement with Trice for the sale of the "Beam-A-Ligner" on the market, adapted the laser beam source to the Trice patent.

But we are here concerned with the Trice patent claims, not the present method by which the plaintiffs practice the Trice

method. The issue is presented whether the laser beam source used by defendants in the accused device is an equivalent to the "collimated narrow beam of light" as called for in the Trice patent claims.

As mentioned earlier, the doctrine of equivalents provides that infringement is not avoided by an accused device which is different in name, form or shape from a patented device if the two devices do the same work in substantially the same way and accomplish substantially the same result. Defendants contend the laser beam cannot be considered an equivalent of a "collimated narrow beam of light" since the laser beam was not in existence and thus was not known when the Trice patent application was filed. For this proposition defendants cite *Gill* v. *Wells,* 22 Wall. 1, 28, 22 L.Ed. 699 (1874); *Fuller* v. *Yentzer,* 94 U.S. 288, 297, 24 L.Ed. 103 (1876); and *Halliburton* v. *Walker,* 67 S.Ct. 6, 329 U.S. 1, 13, 91 L.Ed. 1 (1946).

Gill v. *Wells, supra,* was a case in which the Supreme Court reversed and remanded a finding of infringement and held, inter alia, that one of the instructions given in the lower court "gives an erroneous definition of an equivalent for the ingredient of a combination consisting wholly of such as are old, *as the substituted ingredient in such a case must be one which was known at the date of the original patent as a proper substitute for the ingredient left out,* which latter qualification is entirely omitted in the instruction given to the jury". At Page 31. (Emphasis supplied.)

In *Fuller* v. *Yentzer, supra,* the Supreme Court upheld a finding of non-infringement stating at Page 297:

> . . . the mere substitution of another old ingredient for one of the ingredients of a patented invention is not a good defense for an infringer, if the substitute performs the same function as the ingredient for which it was substituted, and was well known at the date of the patent as a proper substitute for the omitted ingredient; *but the rule is*

> *otherwise if the ingredient substituted* was a new one, or performed a substantially different function, or *was not known at the date of the patent in question as a proper substitute for the one omitted, as in that event the defendant does not infringe.* (Emphasis supplied.)

Halliburton Co. v. *Walker, supra,* dealt not with the issue of infringement but with validity. The Supreme Court, in reversing the 9th Circuit, found the patent in question invalid for failure of proper patent claim descriptions. The Court found that the allegedly infringed patent (Walker) would not have prevailed even if it were properly described, at Page 13: "For had he (Walker) accurately described the resonator together with the Lehr and Wyatt apparatus, and sued for infringement, charging the use of something else used in combination to accent the waves the *alleged infringer could have prevailed if the substituted device* (1) performed a substantially different function; (2) *was not known at the date of Walker's patent as a proper substitute for the resonator;* or (3) had been actually invented after the date of the patent. *Fuller* v. *Yentzer, supra,* at 296-7; *Gill* v. *Wells, supra,* at 29". (Emphasis supplied.)

Plaintiffs, in their post-trial brief on infringement, make no attempt at refutation of the above cases. Plaintiffs merely state that the laser beam used in defendants' accused device is an equivalent to a "collimated narrow beam of light" as called for in the Trice patent claims.

Pursuing the case law on this issue, we find solid support for the rule that a substitute ingredient must be known at the date of the original patent as a proper substitute for the ingredient left out, though a few cases can be found which fail to recognize this rule, *viz., Technical Tape Corp.* v. *Minnesota Mining & Mfg. Co.,* 247 F.2d 343, 350 (2nd Cir., 1957); *Finkelstein* v. *S. H. Kress & Co.,* 113 F.2d 431, 433 (2nd Cir., 1940); *Technicon Instruments Corp.* v. *Coleman Instruments, Inc.,* 255 F. Supp. 630, 641 (N.D. Ill., 1966); *Steel & Tubes* v. *Clayton Mark & Co.,* 21 F. Supp. 326, 329 (D. Del., 1937). A close

reading of these cases show that none of them rely upon any Supreme Court authority for support nor do they even take cognizance of the above cited Supreme Court cases.

A perusal of the case law antedating the *Gill, Fuller* and *Halliburton* cases shows that the principle of law for which they are cited above is intact and has suffered no direct attack. 40 Am. Jur., Patents § 164, 69 C.J.S., Patents § 299. We need only note here that *Halliburton* has been criticized for its narrow view of the requisite of proper description of an invention in view of the later adopted language of 35 U.S.C. § 112, which was passed into law approximately six years after the *Halliburton* decision. *Cf., Application of Engler,* 371 F.2d 508, 512 (CCPA, 1967) and *Application of Fisher,* 314 F.2d 817, 818 (CCPA, 1963). Yet the *Halliburton* case is still cited by the courts for its general holdings regarding descriptions of patent claims. *Cf., Deep Welding, Inc.* v. *Sciaky Bros., Inc.,* 417 F.2d 1227, 1241 (7th Cir., 1969). The holding in *Halliburton* regarding knowledge of an equivalency at the time of the patent is in no way affected by these decisions.

We find of special significance the language in the recent and well-known Supreme Court case of *Graver Tank Co.* v. *Linde Air Products Co., supra,* relating to the requisites of equivalency: "What constitutes equivalency must be determined against the context of the patent, the prior art, and the particular circumstances of the case . . . An important factor is whether persons reasonably skilled in the art would have known of the interchangeability of an ingredient not contained in the patent with one that was." At Page 609.

When speaking of "whether persons reasonably skilled in the art would have known of the interchangeability of an ingredient not contained in the patent with one that was", we are speaking of the date of the filing of the Trice patent application (1957) as the time here involved since the effective date of a United States patent is the date of filing of the application thereof.

Milburn Co. v. *Davis-Bournonville Co.*, 270 U.S. 390, 70 L.Ed. 651 (1926); *Filon Plastics Corporation* v. *H. Koch & Sons*, 243 F. Supp. 636, 646 (N.D. Calif., 1965); *Walker on Patents*, Deller's Ed., p. 137. This is only logical since a patent speaks for all it discloses as of its filing date, *Application of Zenitz*, 333 F. 924 (CCPA, 1964), for a patent application cannot have new matter added to it by amendment, 35 U.S.C. § 132.

The Trice patent application was filed on 4 December 1957. The evidence is unequivocal that the laser beam did not exist at such date. In fact, the expert testimony of Professor Alan Monkewicz shows that it is very doubtful that the laser beam was even known as a proper substitute for the white collimated beam of light in 1964 when the Trice patent was issued. Professor Monkewicz stated that even though the commercial sale of lasers began in 1962, the price was restrictively high and, in fact, it was not until 1966 or 1967 that "extensive knowledge about the application of lasers began to be developed." (R. 1466.)

Accordingly, we find that since the laser beam did not exist when the Trice patent application was filed and thus was not known as a proper substitute for a collimated narrow beam of light, the laser beam cannot be considered an equivalent for purposes of comparison herein.

We further add the fact that even if we treated the laser beam under the "doctrine of equivalents" we would not find it to be an equivalent to the "collimated narrow beam of light" called for in the Trice patent claims. The very properties and characteristics of the laser as expertly testified to by Professor Monkewicz (R. 1475-1489) plainly point out that though it literally might be considered a "collimated narrow beam of light", such is not sufficient here for there is lacking a real identity of means, operation and result. *Skirow* v. *Roberts Colonial House, Inc.*, 361 F.2d 388 (7th Cir., 1966).

Finding that the laser beam used in defendants' accused device is not an equivalent of the "collimated narrow beam of

light" as called for in the Trice patent claims, we find that defendants' accused device does not infringe the Trice patent claims.

Misuse

It is defendants' allegation that plaintiffs are misusing the Trice method patent by requiring the purchase of plaintiffs' equipment in order to obtain a license to practice a patent which is limited solely to method, not apparatus.

Alignment has adopted the policy of selling its equipment along with a license to practice the patented Trice method. Such policy provides that the company will not sell the entire system without a license since the entire system naturally encompasses the patented method. But Alignment also offers the license to practice the method without need of purchasing equipment (R. 1928). The license alone costs $3,000 and the license plus equipment costs $10,000 (R. 652). Though the above is Alignment's stated policy (DX X3), defendants allege that in fact Alignment misleads the public by causing them to believe that Alignment's equipment or apparatus, over which plaintiffs have no patent, is required to be bought in order to obtain a license to practice plaintiffs' method. In support thereof, inter alia, defendants point out the following: (1) that each Alignment license is associated with a specified piece of equipment; (2) that no purchaser has ever bought only the license; (3) Alignment's operating policy bulletins (DX X1 to X5) evidence an attempt to control the sale and rental of the unpatented apparatus; and (4) the testimony of several individuals that were led to believe by plaintiffs that infringement of the Trice patent was had solely by purchasing a competitor's equipment. (See pages 35-39 of defendants' brief on the issues of validity and misuse.)

It is obvious that patent misuse arises from an attempt to extend a method patent to the apparatus needed to practice such method. This is but an extension of the patent misuse rule which proscribes a patent owner from conditioning the grant of

a license upon the paying of royalties on the manufacture, use or sale of apparatus not covered by such patent. *Zenith Radio Corp.* v. *Hazeltine Research, Inc.*, 89 S.Ct. 1562, 395 U.S. 100, 23 L.Ed.2d 129 (1969). Such question of patent misuse is an issue of fact to be determined at trial. *Beckman Instruments, Inc.* v. *Technical Development Corp., et al.*, 7th Cir. slip opinion (September 4, 1970).

We cannot agree with defendants' contentions of misuse. Defendants proffer the allegation that "wide-spread use of threats of litigation practiced by the plaintiffs in their effort to prevent any use of laser equipment to project a light through a pipe against a target within a pipe" was misuse. The fact is that no matter whose equipment was used to project a light through a pipe against a target within a pipe, such projection of light was thought by plaintiffs to infringe their method. Believing, though wrongfully at that time, that their method was being infringed, plaintiffs were not remiss in attempting to prevent use of such equipment since such equipment naturally was thought to encompass the Trice method. The letters advising sewer contractors and others of possible infringement (DX AA, AB, AC, AD and AE) plainly refer to the Trice patent as a method patent and offer for sale a license for $3,000 to practice such method. These letters do not require or even offer for sale the Alignment equipment. We do not read Alignment's operating policy bulletins (DX X1 to X5) as evidencing any attempt to control the sale and rental of unpatented apparatus. We are unable to find any credible evidence of patent misuse by plaintiffs.

Obviously, we are speaking of plaintiffs' past and apparently present licensing procedures. We find no misuse in such practices prior to this opinion since we find they were carried out in good faith in view of the fact that plaintiffs were then bound by no Court ruling of non-infringement. But plaintiffs are not practicing their own patent since they are themselves using a laser beam in their equipment. The effect of our holding

in this opinion is that plaintiffs would be misusing the Trice patent should they continue to require licenses to practice their method as they now employ it since the Trice patent claims do not encompass the use of a laser beam. Plaintiffs cannot be allowed to license as a patented method that which we have found not to be an infringement of plaintiffs' claims. This merely means that plaintiffs cannot require a license of those who practice plaintiffs' present laser beam method with equipment other than plaintiffs'. Plaintiffs can, of course, require a rental fee for others to use their (plaintiffs') equipment, but such rental fee cannot include a license fee to practice a method (laser beam method) which we have held is not an infringement of the Trice method. We express no opinion whether other non-laser "collimated narrow beam of light" methods would infringe the Trice patent since we do not have before us such an accused device.

Defendants also allege plaintiffs' charge of infringement was made in bad faith and seek attorney fees as a consequence thereof. With this we cannot agree. The question of whether to allow attorney fees to a defendant prevailing in a patent infringement suit is solely within the discretion of the trial court. *Amerline Corp.* v. *Cosmo Plastics Co.*, 407 F.2d 666 (7th Cir., 1969). We fail to find the unfairness, bad faith or inequitable conduct on the part of plaintiffs in instituting this action needed to award such fees.

Counsel for the plaintiffs are hereby invited to submit proposed findings of fact and conclusions of law on the issues of validity and misuse; counsel for the defendants are invited to submit proposed findings of fact and conclusions of law on the issue of infringement.

/s/ ROBERT A. GRANT
District Judge

Enter: March 19, 1971.

IN THE UNITED STATES DISTRICT COURT
Northern District of Indiana
South Bend Division

LASER ALIGNMENT, INC. AND CONTRACTORS AUTOMATED DEVICES, INC., *Plaintiffs,* *vs.* WOODRUFF AND SONS, INC AND ROY J. WOODRUFF, *Defendants.*	Civil No. 4261

ORDER

After a lengthy trial, the submission of briefs followed by oral argument, and after a review and consideration of the entire record herein, the Court now makes the following Findings of Fact and Conclusions of Law and enters Judgment accordingly.

/s/ ROBERT A. GRANT
District Judge

Enter: December 1971.

A. Findings of Fact as to Jurisdiction and Issues

1. The Plaintiff, Laser Alignment, Inc., is a Delaware corporation having its principal place of business in Grand Rapids, Michigan.

2. The Plaintiff, Contractors Automated Devices, Inc., is a Delaware corporation having its principal place of business in Arlington, Virginia.

3. The Defendant, Woodruff & Sons, Inc., is an Indiana corporation having its principal place of business in Michigan City, Indiana.

4. The Defendant, Roy J. Woodruff, is an individual residing in Michigan City, Indiana.

5. The Court has jurisdiction over the persons of the parties and venue is proper.

6. Plaintiff, Contractors Automated Devices, Inc., is the owner of United States Patent No. 3,116,557 which is exclusively licensed to Plaintiff, Laser Alignment, Inc.

7. The Plaintiff, Laser Alignment, Inc., on September 30, 1968, filed a Complaint alleging infringement by Defendants of the claims of United States Patent No. 3,116,557 by the practice of a method for laying underground pipe. After Defendants filed a Motion to Dismiss the Complaint on the basis of improper parties, Plaintiff, Contractors Automated Devices, Inc., was added as a party plaintiff to this action.

8. The Defendants on November 11, 1968, by Answer and Counterclaim denied the charge of infringement, alleged invalidity of United States Patent No. 3,116,557, and also asserted misuse of the patent as a defense.

B. Findings of Fact as to Invalidity and Misuse

9. In their Answer and Counterclaim, Defendants alleged that Patent No. 3,116,557 was invalid for several reasons: (1) lack of novelty under 35 U.S.C. § 101 and § 102; (2) lack of invention under 35 U.S.C. § 103; (3) failure to distinctly claim the invention under 35 U.S.C. § 112; (4) failure to describe the invention under 35 U.S.C. § 112; (5) old and exhausted combination; and (6) addition of new matter in violation of 35 U.S.C. § 132.

10. The application for United States Patent No. 3,116,557 was filed December 4, 1957, and was issued on January 7, 1964, to James R. Trice, Jr. This patent in suit is referred to as the Trice patent.

The Patent Examiner, in passing this patent to issue, placed of record in the file history the following references:

Patent No.	Patentee	Date
50,182	Stackpole	Sept. 26, 1865
327,320	Saegmuller	Sept. 29, 1885
575,215	Davis	Jan. 12, 1897
705,970	Shattuck	July 29, 1902
1,296,248	Williamson	March 4, 1919
1,662,836	Steinle	March 20, 1928
2,072,286	Wellington	March 2, 1937
2,079,791	Cook	May 11, 1937
2,304,129	Thurlow	Dec. 8, 1942
2,342,828	Armitage, et al.	Feb. 29, 1944
2,407,845	Nemeyer	Sept. 17, 1946
2,436,892	Hunter	March 2, 1948
2,475,618	Johnson	July 12, 1949
2,482,749	Eckert	Sept. 27, 1949
2,546,524	Schipplock	March 27, 1951
2,570,275	Reading	Oct. 9, 1951
2,570,458	Kowalczyk	Oct. 9, 1951
267,157	German	Nov. 10, 1913
307,257	German	Aug. 6, 1918

11. The Defendants in alleging invalidity, in addition to several of the patents cited by the Patent Office, cited and relied upon the following patents and publications:

Patent No.	Patentee	Date
685,455	Kinkead	Oct. 29, 1901
1,035,426	Dixon	Aug. 13, 1912
1,602,698	Nielsen	Oct. 12, 1926
2,198,836	Patton	April 30, 1940
2,198,837	Morgan	April 30, 1940
2,285,281	Johnson	June 2, 1942
2,376,700	Kinney	May 22, 1945
2,729,897	Smith	Jan. 10, 1956
838,806	French	Mar. 16, 1939
496,541	British	Dec. 1, 1938
732,445	British	June 22, 1955
868,792	German	July 8, 1949

Publications

Transactions—American Society of Civil Engineers, Vol. XXVII, October, 1892. "A Method of Tunnel Alignment" by H. F. Dunham, P. 453-7; 463-5.

Interferometric Alignment Set by P. W. Harrison, P. 670-1 of British publication "The Engineer", May 7, 1954, Vol. 197.

"Toepassingsmogelijkheden Van een Precisie—Aligneer-Methode" by J. G. Doekes and W. DeBruin, in Dutch publication "De Ingenieur", March 11, 1955, Vol. 67, No. 10.

12. The large quantity of prior art references cited by the Defendants is a reflection and evidence of the non-obviousness of the patented method.

13. For over a century underground pipelines have been laid by time-consuming and often inaccurate methods, the most widely-used of these methods involving the so-called batterboard string line method which lends itself to inaccuracies resulting from possible human error in calculations required for locating each batterboard and string, the positioning of the grade rod, and sighting for grade. Additional problems arose in the batterboard method because the placing of the batterboards often conflicted with the stacking of the excavated dirt or the positioning of the back-filling machinery.

14. The Trice method of laying underground pipelines was characterized by a series of steps including projecting a collimated narrow beam of light in a trench along a desired course for the pipeline and then individually positioning or stacking the sections of the pipe, seriatim, end-to-end, one after another, with their axes along this beam, the light beam being projected through the pipes and the position of each pipe being observed by sighting with a target having a translucent screen removably inserted in the end of each pipe section to extend across the pipe axis.

15. The patents cited by the Patent Office and by the Defendants in this action, either singly or in combination, do not

anticipate or make obvious to one skilled in the art the method described and claimed in the Trice patent.

16. The level of ordinary skill in the pertinent art under consideration reveals that despite the archaic batterboard methods actually used in the art, the artisans themselves, including civil and sanitary engineers, ignored the useful adaptation of a collimated beam of light by means of the Trice patented method in the art of laying pipe.

17. The teaching of the Trice patent relating to a method of laying pipe by projecting a light beam through the pipe and using a translucent target as described above was a valuable contribution to the sanitary engineering art.

18. The prior art patents cited by the Patent Office, as listed above, neither alone or in combination, anticipate or make obvious to one skilled in the art the Trice patented method.

19. The other prior patents cited by the Defendants in this action disclose nothing more pertinent than that considered by the Patent Office.

20. The patents and publications cited by the Defendants in this action, either alone or in combination, do not anticipate or make obvious to one skilled in the art the method of the Trice patent.

21. The Trice patent does disclose a new method which involves more than mechanical skill.

22. The use of the time-consuming and often inaccurate batterboard method for a period of over 100 years for laying underground pipe is evidence of the long-felt need for a new method of laying underground pipe.

23. Mr. Trice realized the long-felt need for a new method of laying underground pipe and exercised more than mechanical skill in conceiving and reducing to practice his method.

24. Several years after Trice conceived his method and filed his application, Glen Blount conceived a method of laying pipe with a light beam instead of batterboards. Glen Blount

formed a partnership with J. C. George in November, 1963, for the purpose of obtaining a patent on such method and on an instrument to lay sewer pipe with a laser beam and also to develop and commercialize this instrument (PX-107, p. 8). In September, 1964, Blount & George filed a patent application which eventually issued as Patent No. 3,279,070 in which they originally claimed the following method:

> "The method of aligning pipes comprising the steps of projecting a beam of light through and generally axially of the pipe and against the surface of a target, utilizing said light beam to project onto the target an image of visual markings accurately located in and on the axis of the pipe, and manipulating the pipe to cause said image to coincide with the center of the spot of light produced by said light beam on the target, and permanently positioning said pipe as thus manipulated."

This method claim was considered by the Patent Office to be taught by the Trice patent and after rejection of it, the patent was limited to specific apparatus for mounting and adjusting the light source.

Mr. Blount testified that the method as defined by the above claim was considered by him at the time of filing his patent in 1964 to be an invention and patentable (PX-107, p. 41).

25. In view of the prior art as previously discussed, the claims of the patent in suit are not directed to an old combination.

26. The amendment specifically made to column 5, lines 39-52 of the Trice patent specification which describes the steps of the method for positioning the first pipe section was made only for the purpose of clarity and does not constitute new matter. Such amendment was obviously disclosed in the original specification. There is good support in the original claims, drawings, and description for this amendment. No evidence or testimony was submitted by Defendants to rebut this conclusion.

27. The specification of the Trice patent contains a written description of the invention in such full, clear, precise and exact terms as to enable any person skilled in the art to which it pertained, or with which it is most nearly connected, to make and use the same. This was admitted by the Defendants' witness, Mr. Booz. Furthermore, the specification of the Trice patent concludes with two claims which particularly point out and distinctly claim the subject matter which Mr. Trice regarded as his invention.

28. Laser Alignment adopted the policy of selling its equipment along with a license to practice the patented Trice method. Such policy provided that the company would not sell the entire system without a license since the entire system naturally encompasses the patented method. Laser Alignment also offers the license to practice the method without need of purchasing its equipment. This policy does not attempt to extend a method patent to the apparatus needed to practice such method. Further, there is no evidence to support Defendants' allegation that in fact Laser Alignment misleads the public by causing them to believe that Laser Alignment's equipment and apparatus is required to be bought in order to obtain a license to practice the patented method.

29. All letters advising sewer contractors and others of possible infringement plainly refer to the Trice patent as a method patent and offer for sale a license to practice such method. These letters do not require or even offer for sale the Laser Alignment equipment.

30. Laser Alignment's operating policy bulletins (DX-X-1 to X-5) do not evidence any attempt to control the sale and rental of unpatented apparatus.

31. The evidence in this action does not indicate any widespread use of threats of litigation practiced by the Plaintiffs in an effort to control the sale and rental of unpatented apparatus.

32. The practices of Plaintiffs as pertained to the Trice patent with relation to any contractors or any parties what-

soever were carried out in a good-faith effort to license, protect, and enforce their patent rights. Such activities did not constitute an extension of the patent monopoly and any misuse of the patent.

33. The Court finds no misuse of the Plaintiffs' past and present licensing procedures and other practices in view of the fact that they were not bound by a court ruling of non-infringement at the time of such procedures and practices. However, with the present Court's ruling on non-infringement, if the Plaintiffs continue to require licensees to practice their method as they now employ it with the use of a laser beam, such requirement for a license will constitute misuse unless this Court's holding is reversed.

C. Findings of Fact as to Issue of Infringement

34. The application for the Trice patent in suit was filed on December 4, 1957, and contained seven claims to a method of laying a pipeline, five claims to apparatus for use in laying a pipeline, and one claim to an attachment for a surveyor's transit.

35. During the prosecution of the application in the Patent Office, all claims directed to the apparatus and to the attachment for a surveyor's transit were rejected and then withdrawn, all original claims directed to the method were rejected and withdrawn, additional claims directed to a method were added, and the patent issued on January 7, 1964, with two claims directed to a method.

36. Claim 1 of the patent as issued reads as follows:

> "1. A method of laying a plurality of pipe sections along a selected rectilinear axis to form a subterranean string of pipe sections extending from a source position comprising the steps of projecting a collimated narrow beam of light from said source position along the selected axis, placing a first pipe section at a position wherein said light beam passes there-through with an end thereof incident to said

light beam disposed closely adjacent said source position and co-axially aligned with said light beam, rigidly coupling a target housing member having a translucent target screen to the exit end of said first pipe section relative to said light beam at a position disposing the target screen across the axis of the pipe section, moving said target housing member transversely of said selected axis and thereby moving said exit end of said pipe section while observing said target screen to locate the light beam intercept with said target screen at a position aligned with the axis of said pipe section whereby said exit end of said first pipe section is coaxially aligned with said selected axis, fixing said first pipe section in its aligned position, and serially laying other pipe sections in coaxial alignment with said selected axis by transferring said target housing member to one end of each successive pipe section corresponding to said exit end, coupling the other end of such successive pipe sections to the exit end of the preceding section, and coaxially aligning the exit ends of such other pipe sections with said selected axis by moving said target housing member in the manner recited for aligning said first pipe section."

37. Claim 2 defines the same steps as Claim 1 by the same terms and differs from Claim 1 only by stating that the collimated narrow beam of light is projected "from a projector at said source position" along the selected axis, and by providing for "coaxially aligning said incident end of said first pipe section with the light beam by observing the disposition thereof relative to said projector".

38. The Trice patent describes the projector for the collimated light beam and the nature of the beam at page 1, col. 2, lines 26-29 as follows:

> "A projector 14 is positioned to project a collimated beam 15 of parallel rays of light on a predetermined course along the trench, thereby providing a reference by which the pipeline may be set in a manner to be described."

And at page 2, col. 4, lines 44-49 of the patent Trice described the beam and the projector as follows:

"The projector 14 is provided with the well-known pinhole aperture and condensing lens (not shown) for projecting a beam of light having parallel rays. The beam of light 15 is pencil-like in diameter and the light source is of a high candle power adequate to project the beam a distance of up to 400 feet." (R-54.)

39. Mr. Trice experimented wtih optical lenses and learned that he could form a substantially collimated light beam by placing the lens the exact focal length away from a light source to create substantially parallel light rays using a light source of so-called "white light" then known.

40. Mr. Trice did not attempt to commercialize the subject of his patent until receipt of the Notice of Allowance of his application from the Patent Office in July, 1963; and then after further development he manufactured several systems called the "Beam-A-Liner" and sold three of these systems to contractors in Virginia and Delaware.

41. At about the same time that Mr. Trice was starting to produce the "Beam-A-Liner", Roger Roodvoets, a contractor in Grand Rapids, Michigan, learned of a light beam being used for sewer construction having a laser as its source which was manufactured by Laserlign, Inc., of Wheeling, Illinois. Mr. Roodvoets experimented with this laser apparatus for approximately one year in laying sewer pipe by projecting a beam over the top of a trench. Mr. Roodvoets then undertook to design his own apparatus using a laser and contacted the Laser Division of Lear-Siegler, Inc., of Ann Arbor, Michigan. During the course of negotiations with that company he learned of the Trice patent.

42. Mr. Roodvoets then purchased a "Beam-A-Liner" unit from Mr. Trice and tested it. He determined that a laser source should be used in apparatus for use in laying sewer pipe instead of the white light source used in the Trice "Beam-A-Liner". He then negotiated an agreement with Mr. Trice, improved the equipment by adapting it to a laser as the light source, and

formed plaintiff Laser Alignment, Inc., to offer the equipment on the market.

43. The defendant Woodruff and Sons, Inc., is a corporation engaged in the business of site development and underground construction including the installation of sewer pipe and water mains, and defendant Roy J. Woodruff is president of that corporation.

The Defendants became aware of equipment known as "The Automatic Grade Light" (AGL) using lasers as the light source and produced by a partnership known as Blount & George from an article in the December 17, 1964, issue of *The Jacksonville News* of Jacksonville, Arkansas.

44. After experimentation with the use of a laser to lay sewer pipe, Blount & George had filed a patent application for the "AGL" on September 10, 1964, upon which Patent No. 3,279,070 issued on October 18th, 1966.

45. Blount & George demonstrated the AGL to Defendants and sold several of the AGL systems to Defendants. The Woodruff corporation became and presently is a distributor of the AGL system, as well as a user of the system in the business of installing sewer pipes and water mains and in site development work.

46. Plaintiffs gave to defendants notice of the Trice Patent No. 3,116,557 about May 8, 1968, based upon the use of the pipe setting and aligning methods as claimed in U.S. Patent No. 3,116,557.

47. The word "laser" is an acronym for light amplification by stimulated emission of radiation. It is considered as an oscillator which gives out light of a particular frequency and consists of an active laser region and one or two mirrors. It is a unique light source different from the incandescent lamp or the mercury lamp or the sun.

48. The theoretical foundations for the laser were laid in 1951. The first practical laser in the visible light range

was made in 1960. Commercial use and sale of lasers commenced in 1961 or 1962. Lasers were not readily available until 1963 or 1964, at which time they cost from $3,000 to $4,000 each.

49. In 1957, the sources of light available to students and engineers were primarily incandescent bulbs, mercury arc lamps, sodium arc lamps, probably xeron flash lamps, and a variety of others, and nothing—with the exception of the sodium arc lamp —was available which could be classified as a single-frequency source without special filtering techniques.

50. The ability to collimate light generated by the various sources available in 1957 was dependent upon the single-frequency characteristic of the light source employed.

51. Among the characteristics of the laser beam are an energy density which is greater than that of the sun, so that anyone who looks into a laser beam, even a low-powered one of the milliamp rating, for more than 30 seconds, risks permanent eye damage, whether looking into the beam directly or into the beam as deflected by a mirror.

52. The features of the laser which make it unique are its single-frequency characteristic, its energy density characteristic, and the inherent high degree of collimation or directionality of its beam without assistance of any kind of lens.

53. All sources of light other than the laser and the sodium arc lamp at two frequencies tend to emit light are collimated by eliminating the element of divergence.

54. The Court observed a demonstration in the hallway of the court, approximately 150 feet long, in which the point of impingement of a collimated beam of white light projected by the Trice "Beam-A-Liner" apparatus could not be seen at the distant end of the hall while the hall lights were lit and could be seen only when the lights were extinguished.

In the same demonstration, the laser beam of the apparatus used by Defendants and the beam of a laser apparatus sold com-

mercially by Plaintiffs were both clearly visible under all lighting conditions.

In the same demonstration, the light beams from the Blount-George laser source and the PX-58 laser source of Plaintiffs, although projecting a highly collimated beam, diverged from 3/8" to 5/8" and 1/16" to 2", respectively, the divergence of the PX-58 source being greater because it did not include a collimating lens as does the Blount-George laser source.

55. In a field inspection by the Court at Michigan City, Indiana, of Defendants' method using a laser beam in daylight in laying 72-inch concrete sewer pipe in a 10-foot cut with a laser beam directed four inches above the pipe invert line, the point of impingement of the laser beam upon a translucent target was simultaneously visible to all who could see the target.

56. The target described in the Trice patent employs a pipe 105 whose outside diameter is only slightly less than the inside diameter of the pipe and which is spanned by a transparent or translucent screen having intersecting lines serving as crosshairs. The target includes a viewing hood 97 of light-tight construction and has a wall 98 at an angle of 45° to the target which supports a mirror. The user observes the impingement of the light beam upon the target as deflected by the mirror and seen through the hood.

57. In the practice of Defendants' method using the laser, workmen observe the point of impingement of the laser beam upon the target while viewing a translucent target on a line of sight oblique to the laser beam, and do not use an inclined mirror to deflect the beam toward their eyes.

58. No light shield is required or used with Defendants' targets in the practice of Defendants' method, and the target need not span the bore of the pipe. The targets used by Defendants need only be large enough to intercept a beam at a selected small distance above the invert line of the pipe.

59. The targets used by Defendants are of two types which are freely shiftable within the pipe. One type constitutes a short

stovepipe or tube carrying a transverse translucent target panel provided with intersecting vertical and horizontal crosshairs. This target is free to roll and find its own position within the pipe. The other target is of the tripod type supporting a translucent panel with intersecting crosshairs and provided with a bubble-type or spirit level to guide positioning of the target at the bottom of the bore of the pipe.

60. In some methods of laying pipe used by the Defendants, the pipe is laid from a starting point such as a manhole. The first pipe section or several successive sections are laid or installed with line and grade determined by use of a transit or other sighting means before the laser is installed at the starting point. In such methods, Defendants check and measure the position of the laser projector by reference to the invert line of the pipe or pipes which previously have been set.

61. In some methods, Defendants install one or more pipe sections before installing the laser so as to avoid the possibility of alteration of the setting of the pipe as a result of the application of the forces reqiured to position and connect the pipe sections adjacent to the starting point or manhole.

62. Defendants' method does not require concern about the position of the axis of the pipe being laid since the laser beam is directed along a line at a selected spacing from the desired invert line of the pipe. Hence deviations of the pipe line resulting from differences in dimensions of pipes of different or successive sections as accommodated by ASTM pipe specifications do not result in an irregular flow line in the assembled pipe sections as laid.

63. Defendants' method of laying pipe using a laser beam and targets of the two types aforementioned entails a difference in principle, procedure and practice as compared to the patented method using the collimated beam of white light, a target with a light-tight hood and a handle on the target to move the pipe. There is no teaching or suggestion of the Defendants' method in the Trice patent.

64. The differences between a laser beam and a collimated beam of white light required the use by both Plaintiffs and Defendants of different apparatus and the practice of a different method than that disclosed and claimed in the Trice patent.

65. The initial steps of Defendants' method aforementioned do not entail the practices defined in the initial part of Claim 1 of the Trice patent which states:

> "A method of laying a plurality of pipe sections along a selected rectilinear axis to form a subterranean string of pipe sections extending from a source position comprising the steps of projecting a collimated narrow beam of light from said source position along the selected axis, placing a first pipe section at a position wherein said light beam passes therethrough with an end thereof incident to said light beam disposed closely adjacent said source position and coaxially aligned with said light beam".

66. The only target described in the Trice patent has an insert pipe 105 with an outside diameter only slightly less than the inside diameter of the pipe 13 which is being laid, and has a target-viewing hood 97 which carries a handle 104 by means of which the pipe end being laid may be moved until the light beam is centered on the bullseye when viewed through the eyepiece 101.

67. Defendants' target fits loosely in the pipe. The target is subject to movement by rolling in the pipe when of the stovepipe-type. Defendants' tripod-type target must be adjusted to center it in the bottom of the pipe bore following movement of the pipe to set it.

68. In some instances Defendants remove the target from the pipe while moving the pipe after taking an initial reading of the laser beam impingement upon the target and before rechecking the point of laser beam impingement on the target after pipe position adjustment has been made.

69. Defendants do not practice the following steps of Claim 1 of the Trice patent:

"rigidly coupling a target housing member having a translucent target screen to the exit end of said first pipe section relative to said light beam at a position disposing the target screen across the axis of the pipe section, moving said target housing member transversely of said selected axis and thereby moving said exit end of said pipe section while observing said target screen to locate the light beam intercept with said target screen at a position aligned with the axis of said pipe section whereby said exit end of said first pipe section is coaxially aligned with said selected axis".

70. Defendants' method does not entail a "rigid coupling" of a target to a pipe, nor movement of a pipe in consequence of or by means of movement of the target carrier, nor observance of the target screen and movement of the target carrier simultaneously, as specified in Claim 1 of the Trice patent.

71. Defendants lay successive pipes with reference to the desired invert line rather than with reference to coaxial relation, and thus disregard the pipe axes to ensure that the invert line of the pipes making up the pipeline is continuous and devoid of obstacles at which interference with flow and collection of fluid content can occur.

72. Movement of the target as a means to move the pipe as claimed in the Trice patent is necessary to ensure that the target hood is held in a position to permit the operator to continuously observe the point of impingement of collimated white light upon the target as the pipe is being moved, and to ensure the continuous exclusion of ambient light from the target screen as necessary to permit viewing of the point of impingement of that collimated white light upon the screen; whereas Defendants' method does not practice or require continuous observation of the point of laser light impingement on the target screen nor exclusion of ambient light to enable observation of the point of laser light impingement on the target screen after the position of the target in the pipe has been re-checked or re-established following change in pipe position, as by observing the vertical and horizontal position of the crosshairs of the rolling type of De-

fendants' target or by observing the bubble of a spirit level of the tripod-type of Defendants' target.

73. Defendants do not practice the step defined in Claim 1 of the Trice patent:

> "serially laying other pipe sections in coaxial alignment with said selected axis"

because the pipe sections are not aligned or referenced at their axis, but only at their invert or flow line.

74. Defendants do not practice the final step of the method of Trice Claim 1:

> "coaxially aligning the exist ends of such other pipe sections with said selected axis by moving said target housing member in the manner recited for aligning said first pipe section".

75. Claim 2 of the Trice patent defines the same steps or acts as Claim 1, and additionally specifies the act of projecting the beam of light "from a projector at said source position" and the act of "coaxially aligning said incident end of said first pipe section with the light beam by observing the disposition thereof relative to said projector". Defendants do not align the incident end of the first pipe by observing the disposition thereof relative to the laser projector, inasmuch as the first pipe is set before the setting of the laser projector.

D. Conclusion of Law

1. This Court has jurisdiction of the subject matter and of the parties. Venue is properly founded in this Court.

2. Plaintiff, Contractors Automated Devices, Inc., is the owner of the Trice patent in suit and Laser Alignment, Inc., is the exclusive licensee thereof.

3. A patent is presumed valid and the burden of establishing invalidity of the claims thereof rests on the party asserting invalidity, 35 U.S.C. § 282.

4. The presumption of validity as set forth in 35 U.S.C. § 282 accompanying the issuance of a patent applies to Claims 1 and 2 of the Trice patent here in issue because most of the prior art references cited by the Defendants in this cause disclose nothing more pertinent than that considered by the Patent Office. Those prior art references which are not equivalent to those cited of record by the Patent Office are such weak prior art references that they are completely irrelevant to the Trice patented method.

5. The large quantity of prior art references cited by the Defendants is a reflection of non-obviousness. In this case the Defendants have not sustained their burden of overcoming the presumption of validity.

6. Claims 1 and 2 of United States Patent No. 3,116,557, issued January 7, 1964, to James R. Trice, Jr., are valid. The differences between the method patented and the prior art references cited by the Defendants are such that the claimed subject matter as a whole was novel and not anticipated by prior methods at the time of the invention. Therefore, the patent satisfies 35 U.S.C. § 101 and 102.

7. Ciaims 1 and 2 of United States Patent No. 3,116,557, issued January 7, 1964, to James R. Trice, Jr., are valid. The differences between the method patented and the prior art references cited by the Defendants are such that the claimed method as a whole would not have been obvious at the time the invention was made to a person having ordinary skill in the art to which said method pertains, 35 U.S.C. § 103.

8. Claims 1 and 2 of United States Patent No. 3,116,557, issued January 7, 1964, to James R. Trice, Jr., are not invalid for failure to comply with 35 U.S.C. § 112, since the patent specification, including the written description of the invention, and of the manner and process of making and using it satisfies the requirements of 35 U.S.C. § 112.

9. Claims 1 and 2 of United States Patent No. 3,116,557, issued January 7, 1964, to James R. Trice, Jr., are not invalid

for failure to comply with 35 U.S.C. § 112, since the patent contains a specification which concludes with the two claims which particularly point out and distinctly claim the subject matter which the applicant regards as his invention and in the manner satisfying the requirements of 35 U.S.C. § 112.

10. The Claims of the patent in suit are not directed to an old combination.

11. The amendment in column 5, lines 39-52 of the Trice patent does not constitute new matter in violation of 35 U.S.C. § 132.

12. The acts of Plaintiffs in selling its equipment along with a license to practice the patented Trice method and offering licenses to others to practice the patented method with the use of equipment other than Laser Alignment's, does not extend the method patent to the apparatus and therefore does not constitute misuse of the patent.

13. Defendants have not proven any facts relating to the acts of Plaintiffs which can be considered to be a misuse of United States Patent No. 3,116,557.

14. Infringement is not made out by a mere word comparison between the claims in issue and the accused method. There must be real identity.

15. Infringement should not be determined by comparison of Plaintiffs' commercial method and equipment used to practice it with Defendants' commercial method and equipment. It should be determined by reading of the claims on the accused method in the light of the patent in suit, the prior art, and the file history of the patent in suit.

16. A patentee should not be permitted to claim infringement by a method not embodying steps which he relied upon to distinguish his method from the prior art.

17. The use of a beam generated by a laser in a method of laying sewer pipe cannot infringe a claim directed to use of a col-

limated beam of light contained in a patent whose application was filed before the invention of the laser.

18. Because of the properties and characteristics of the laser, it lacks the real identity with the "collimated narrow beam of light" refered to in the claims of the patent in suit.

19. Defendants do not infringe Claim 1 of the Trice Patent No. 3,116,557.

20. Defendants do not infringe Claim 2 of the Trice Patent No. 3,116,557.

JUDGMENT

In conformity with the foregoing Findings of Fact and Conclusions of Law, it is Hereby Ordered, Adjudged, and Decreed:

1. That judgment be entered in Paintiffs' favor and against the Defendants with respect to the validity of the subject patent and the Plaintiffs' use of said patent;

2. That judgment be entered in Defendants' favor and against the Plaintiffs with respect to Plaintiffs' claims of infringement of the subject patent;

3. That no attorney's fees be awarded to either party;

4. That the parties to this action assume their respective costs.

/s/ ROBERT A. GRANT
District Judge

Enter: 30 December 1971.

IN THE UNITED STATES COURT OF APPEALS

For the Seventh Circuit

SEPTEMBER TERM, 1972 — APRIL SESSION, 1973

Nos. 72-1254, 72-1255

LASER ALIGNMENT, INC., and CONTRACTORS AUTOMATED DEVICES, INC.,

Plaintiffs-Appellants,

v.

WOODRUFF & SONS, INC., and ROY J. WOODRUFF,

Defendants-Appellees,

Appeal from the United States District Court for the Northern District of Indiana, South Bend Division.

Civil No. 4261

ROBERT A. GRANT, *Judge.*

ARGUED APRIL 4, 1973—DECIDED JANUARY 22, 1974

Before Clark,* *Associate Justice,* and FAIRCHILD and PELL, *Circuit Judges.*

PELL, *Circuit Judge.* Plaintiffs Laser Alignment, Inc., (Alignment) and Contractors Automated Devices, Inc., (Contractors) brought this patent infringement action against Woodruff & Sons, Inc., (Woodruff) and Roy J. Woodruff, alleging infringement of Trice Patent No. 3,116,557, owned by Contractors and licensed exclusively to Alignment. The Trice patent, issued January 7, 1964, and entitled "Method and Means for Laying Sewer Pipe," involves, in the words of the patent, "a method and means for laying said pipeline on a selected grade

* Associate Justice Tom C. Clark, United States Supreme Court, Retired, is sitting by designation.

line by resort to establishing a light beam line of reference." The complaint sought a permanent injunction, triple damages, and costs. In their answer and counterclaim, the defendants challenged both validity and infringement. They also asserted misuse of the patent as a defense.

After a full trial on the merits, the district court held: (1) the Trice patent is valid; (2) the defendants had not infringed the patent; and (3) the plaintiffs had not misused the patent. Plaintiffs appeal the finding of noninfringement. Defendants appeal the court's resolution of the other two issues.

I

Prior to the development of Trice's method for laying underground pipe, pipes usually had been laid by the batterboard or the offset batterboard methods. Both traditional methods required supporting boards on support stakes at predetermined altitudes and strings tied between the stakes from which measurements were taken to align properly the sections of pipe. This procedure, despite time-consuming and costly, was often inaccurate.

James Trice, a pipe-laying enterpeneur discomfited by the unsatisfactory prevailing methods, experimented with improvements. Eventually, he decided that the use of a collimated beam of light smaller than the inside diameter of the pipe to be laid was a better method. He thereupon developed a projector to create the parallel light rays. The apparatus projected the collimated beam into a ring-shaped target housing on which there was a piece of frosted glass with cross hairs thereon. Using his light projector and target, he was able to lay and align sections of pipe.

On December 4, 1957, Trice filed a patent application. It contained claims devoted to an apparatus, to a method, and to a system. The application pended for more than six years, following which time the Patent Office granted Trice Patent

No. 3,116,557 on two method or process claims.[1] Significantly, no patent was granted on apparatus. Trice's method, in the words of the district court,

> "was characterized by a series of steps including projecting a collimated narrow beam of light in a trench along a desired course for the pipeline and then individually positioning or stacking the sections of the pipe, seriatim, end-to-end, one after another, with their axes along this beam, the light beam being projected through the pipes and the position of each pipe being observed by sighting with a target having a translucent screen removably in-

1. Claim 1 of the patent as issued provides:

"1. A method of laying a plurality of pipe sections along a selected rectilinear axis to form a subterranean string of pipe sections extending from a source position comprising the steps of projecting a collimated narrow beam of light from said source position along the selected axis, placing a first pipe section at a position wherein said light beam passes therethrough with an end thereof incident to said light beam disposed closely adjacent said source position and coaxially aligned with said light beam, rigidly coupling a target housing member having a translucent target screen to the exit end of said pipe section relative to said light beam at a position disposing the target screen across the axis of the pipe section, moving said target housing member transversely of said selected axis and thereby moving said exit end of said pipe section while observing said target screen to locate the light beam intercept with said target screen at a position aligned with the axis of said pipe section whereby said exit end of said first pipe section is coaxially aligned with said selected axis, fixing said first pipe section in its aligned position, and serially laying other pipe sections in coaxial alignment with said selected axis by transferring said target housing member to one end of each successive pipe section corresponding to said exit end, coupling the other end of such successive pipe sections to the exit end of the preceding section, and coaxially aligning the exit ends of such other pipe sections with said selected axis by moving said target housing member in the manner recited for aligning said first pipe section."

Claim 2 basically reiterates Claim 1 but adds the additional information that the collimated narrow beam of light is projected "from a projector at said source position along the selected axis" and also provides for "coaxially aligning said incident end of said first pipe section with the light beam by observing the disposition thereof relative to said projector."

serted in the end of each pipe section to extend across the pipe axis."

After receiving his patent, Trice set up a corporation, Contractors Automated Devices, Inc., which manufactured several systems called the "Beam-A-Ligner." Three contractors bought these systems and successfully practiced the method by the use of the equipment.

At about the same time that Trice was beginning to produce his "Beam-A-Ligner," a Michigan contractor, Roger Roodvoets, heard about a light beam, with a laser as its source, that Laser Lign, Inc., of Illinois was manufacturing for use in sewer construction. The laser—the device's name is an acronym for "l(ight) a(mplification by) s(timulated) e(mission of) r(adiation")—had not yet been invented when Trice filed his patent application in 1957. The principal features of the laser, the district court found, are "its single frequency characteristic, its energy density characteristic, and the inherent high degree of collimation or directionality of its beam without assistance of any kind of lens. All sources of light other than the laser and the sodium arc lamp at two frequencies tend to emit light in all directions and beams therefrom are collimated by eliminating the element of divergence." The laser became available to the public only in 1963 and was not widely known until the mid 1960's.

Trice in his experimentation prior to the invention of the laser had achieved the nondiffusing effect apparently inherent in the laser beam by placing a lens the exact focal length away from a light source, thereby creating parallel light rays. The patent he was granted, however, was for a method and not for apparatus, and the claims of the patent here involved refer to a collimated narrow beam of light rather than to particular apparatus projecting that light.

Roodvoets' firm experimented for over a year with the Laser Lign equipment but was unable to make the apparatus perform satisfactorily. While negotiating with a Michigan company

to build a complete laser with housing and grade equipment. Roodvoets learned of the Trice patent and Trice's "Beam-A-Ligner" apparatus. Roodvoets purchased one of these systems and successfully laid 200 feet of pipe with it. He decided, however, that the newly discovered laser source should be substituted for the white light source of the "Beam-A-Ligner." Alignment, the firm that Roodvoets had formed, entered into an agreement with Trice, improved the equipment, adapting it to a laser light source, and later offered it commercially. Alignment followed a policy of selling its apparatus only in conjunction with the grant of a sublicense to practice the patented Trice method. However, contractors who wished to purchase equipment from other companies could obtain licenses on the same terms as Alignment's customers did.

In November 1963, an Arkansas concern, Blount and George, was founded to further Blount's idea, apparently conceived without knowledge of Trice's earlier work, of laying pipe with a light beam instead of by the traditional, cumbersome batterboard method. In early 1964, after having tested other light sources, Blount and George began to experiment with lasers and built an apparatus called the "Automated Grade Light" (AGL). Several contractors used this equipment in mid 1964. Subsequently, on September 10, 1964, Blount and George filed a patent application asserting ten claims. The Patent Office in January 1966 rejected seven of the claims, one (claim No. 10) because it was deemed unpatentable over the Trice method.[2]

2. Claim 10, which the Patent Office rejected as being predated by the Trice patent, stated:

> "10. The method of aligning pipes comprising the steps of projecting a beam of light through and generally axially of the pipe and against the surface of a target, utilizing said light beam to project onto the target an image of visual markings accurately located in and on the axis of the pipe, and manipulating the pipe to cause said image to coincide with the center of the spot of light produced by said light beam on the target, and permanently positioning said pipe as thus manipulated."

This succinct paraphrase of the Trice claims in the patent in suit would now presumably be said by Woodruff to have been

Blount and George amended its application, and, on October 18, 1966, the Patent Office granted patent 3,279,070 on seven claims. These claims, however, pertain only to specific apparatus.

Defendant Woodruff corporation read a December 1964 newspaper article about Blount and George's AGL system and, as a consequence, purchased some of the equipment. Woodruff eventually became a distributor of Blount and George's apparatus.

On or about May 8, 1968, the plaintiffs sent the defendants written notice of the existence of the Trice patent, alleged infringement, and offered the defendants a sublicense under the patent. On September 30, 1968, the plaintiffs filed the present patent infringement action.

Defendants challenge the validity of the Trice patent on several grounds: (1) lack of novelty under U.S.C. §§ 101 and 102; (2) obviousness under 35 U.S.C. § 103; (3) failure to claim distinctly the invention and failure to describe it, 35 U. S. C. § 112; (4) old and exhausted combination; and (5) addition of new matter in violation of 35 U.S.C. § 132.

In a scholarly and detailed memorandum opinion, the district court considered and rejected each of the defendants' contentions. Although, and unfortunately, the district court opinion has not been published, we can conceive little purpose in now proliferating this reported decision by the factual minutiae necessarily examined and reported on by the district court in its disposition. Holding that the district court's opinion did correctly dispose of the validity issue, we therefore advert only to the principal bases on which we rest our approval and leave to those who may wish to know more about the prior art in this phase of ditchdigging the task of securing a copy of the district court's memorandum opinion from the clerk of that court.

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obvious in the light of prior art even in the absence of the Trice patent.

As the district court correctly pointed out, a party asserting a patent's invalidity bears the burden of proving invalidity and must overcome by clear and convincing proof the presumption of validity established by 35 U.S.C. § 282. *Walt Disney Productions* v. *Fred A. Niles Communications Center,* 369 F.2d 230 (7th Cir. 1966). Further, this initial presumption is strengthened where the Patent Office, before granting the patent, has considered the prior art references, or equivalent references, relied upon by the party claiming invalidity. *Ekstrom-Carlson & Co.* v. *Onsrud Machine Works, Inc.,* 298 F.2d 765 (7th Cir. 1962), *cert. denied,* 369 U. S. 886; *American Needle & Novelty Co.* v. *Schuessler Knitting Mills,* 258 F. Supp. 98, 105 (N.D Ill. 1966).

In order to overcome the presumption of validity and to show that the Trice patent was obvious, the defendants introduced into evidence as prior art four publications and twenty-one patents, most of which had either been before the Patent Office Examiner or were equivalent to those that had been considered. After examining the evidence, the district court upheld the validity of the Trice patent. As stated, we concur in the court's evaluation of the exhibits and in its judgment on the validity issue.

III

Regretfully, because of the obviously careful attention given to this case by the district court, we do not agree with its holding that there had been no infringement. Our review of the issue is based on documentary evidence and substantially undisputed facts and concerns, in essence, the legal construction of the scope of the patent claims. We are not bound, therefore, by the findings of fact of the district court, *Hart* v. *Gallis,* 275 F.2d 297, 299 (7th Cir. 1960). In any event, we are, on the entire evidence, left with the definite and firm conviction that a mistake has been committed. We conclude, contrary to the district court's opinion, that defendants did practice the patented Trice method. Having done so without having obtained a sublicense from Laser Alignment, they infringed the Trice patent.

A

The basis of the district court's holding that defendants had not infringed the Trice patent was that "[t]he use of a beam generated by a laser in a method of laying sewer pipe cannot infringe a claim directed to use of a collimated beam of light contained in a patent whose application was filed before the invention of the laser." In conjunction with this conclusion, the court further stated that "even if we treated the laser beam under the 'doctrine of equivalents' we would not find it to be an equivalent to the 'collimated narrow beam of light' called for in the Trice patent claims."

We think that the district court placed undue emphasis on the apparatus creating the collimated beam of light. The important point is that the use of a collimated beam of light is a step in the Trice methods patent. The claims of a patent are the measure of its grant, see *Graver Tank & Mfg. Co., Inc.* v. *Linde Air Products Co.*, 339 U.S. 605 (1950), *Milcor Steel Co.* v. *Fuller Company*, 316 U.S. 143 (1942), and *Continental Paper Bag Co.* v. *Eastern Paper Bag Co.*, 210 U.S. 405, 419 (1908). A fair reading of the Trice claims indicates that Trice's invention consisted of a *method* of, not an *apparatus* for, laying underground pipe by projecting *any* collimated narrow beam of light through pipes as a reference line, the intercept of which with a translucent target provides a guide for the laying of such pipes. We find no real dispute in the record of the fact that the laser beam used by the defendants was a collimated narrow beam of light. Under the simplified, literal infringement test set forth in *Graver, supra,* 339 U.S. at 607,

> "[i]n determining whether an accused device or composition infringes a valid patent, resort must be had in the first instance to the words of the claim. If accused matter falls clearly within the claim, infringement is made out and that is the end of it."

We, therefore, have conceptual difficulty in typifing the laser beam when utilized in the Trice method as being a substituted

process step. The laser beam, like the white light beam originally used in the practice of the Trice method, is a "collimated narrow beam of light" called for by the Trice patent. To emphasize the fact that the collimated beam of light to be used in the patented method may be produced by a variety of apparatus is to lose sight of the patent's most significant characteristic—it relates to a method, not to apparatus.

We find it unnecessary, however, to rest our decision on the simple *Graver* test, set forth above. We turn to a consideration of the applicability of the doctrine of equivalents:

> "The test of identity or equivalence of two processes is not the apparatus or materials used but whether they involve identical or equivalent steps. Steps are equivalent if they work in substantially the same way to accomplish the same results." *Kemart Corp.* v. *Printing Arts Research Laboratories, Inc.*, 201 F.2d 624, 629 (9th Cir. 1953). (Footnotes omitted.)

The district court in finding the doctrine of equivalents not to be applicable focused on the fact that the laser had not been invented at the time the Trice patent application was filed. In support of the result it reached in this respect, the district court relied on three Supreme Court decisions: *Gill* v. *Wells*, 89 U.S. 1 (1874); *Fuller* v. *Yentzer*, 94 U.S. 288 (1876); and *Halliburton Oil Well Cementing Co.* v. *Walker*, 329 U.S. 1 (1946).

As we read these cases, ample basis exists for differentiating them factually from the case before us. Indeed, on the point in question, *Fuller* and *Halliburton* treat the matter in dicta. The decision of the Court in *Gill* to reverse the lower court could have rested on any one of several grounds, the timing portion pertinent here not being the primary basis of the Court's decision. Nevertheless, there seems to be support for a doctrine in patent law that for the doctrine of equivalency to be applicable the substituted process step must have been known at the date of the patent as a proper substitute. See 69 C.J.S. *Patents* § 303, at 878 (1951).

Even if we assume arguendo, despite the fact that the laser beam is literally a collimated narrow beam of light, that the existence or nonexistence of the laser might have some bearing on the infringement issue, it is our opinion that the district court improperly determined the crucial time to be the date of the patent application, here 1957, rather than the date the patent was granted, January 1964.

The cases relied upon by the district court do not specify whether the date of application or the date of granting controls. *Gill*, for example, states that "the substituted ingredient in such a case must be one which was known at the date of the original patent as *a proper substitute* for the ingredient left out." (Emphasis in the original, 89 U.S. at 31-32). Similar references to the vague term "date of the patent" appear in the other cases.

A priori, it would appear to us that to carve out of infringing status an equivalent substituted step, even though it clearly is within the literal language of the claim, if that step came into existence after the filing but before the grant would be to narrow unduly the protection supposedly afforded by the patent. We recognize, of course, that for the purpose of priority of invention the effective date of a patent is the filing of the application. See, *e.g.*, *Alexander Milburn Co.* v. *Davis-Bournonville Co.*, 270 U.S. 390 (1926). The obvious necessity for a relation-back rule in cases of this type does not exist in the present situation.

In our opinion, the Supreme Court intended a patentee to be allowed to challenge successfully the use of a substituted ingredient that was known by persons reasonably skilled in the relevant art as of the date the Patent Office granted the allegedly infringed patent. For example, in *Seymour* v. *Osborne*, 78 U.S. 516, 555-56 (1871), decided several years prior to *Gill*, Mr. Justice Clifford, who also authored *Gill*, speaking for the Court, stated:

> "They [holders of patents] cannot suppress subsequent improvements which are substantially different, whether

> the new improvements consist in a new combination of the same ingredients, or of the substitution of some newly-discovered ingredient, or of some old one, performing some new function *not known at the date of the letters patent*, as a proper substitute for the ingredient withdrawn from the combination constituting their invention. Mere formal alterations in a combination in letters patent, however, are no defence to the charge of infringement, and the withdrawal of one ingredient from the same and the substitution of another which was well known at the date of the patent as a proper substitute for the one withdrawn, is a mere formal alteration of the combination if the ingredient substituted performs substantially the same function as the one withdrawn." (Emphasis added.)

It appears to us that the Court clearly intended to adopt the theory that he who would deny a charge of infringement on the basis of the newness of the substituted element must have utilized an element that was not known as a proper substitute at the date the patent's claims were staked out in the public domain, *i.e.*, at the date the patent was no longer pending but was granted.

We hold, therefore, that it was erroneous to find non-infringement on the ground that the laser was not in existence in 1957, the date of the Trice application. To the extent that the district court concluded that the laser beam as a substituted element was insufficiently known at the date Trice was granted his patent, we cannot agree. The record fully supports the determination that in 1964, when the Trice patent was issued, "persons reasonably skilled in the art would have known," *Graver, supra,* 339 U.S. at 609, that the laser beam could properly (and profitably) be used instead of the white collimated beam of light. Defendants' supplier, Blount and George, thought of using a light beam to lay sewer pipe in the early 1960's, before they had heard of lasers, and by the time they made a patent search in 1963 they considered lasers to be "the ideal solution." They investigated lasers and reached their conclusions about the lasers' utility prior to the issuance of Trice's patent. We also note Finding of Fact No. 48, in which the district court found that

commercial use and sale of lasers commenced in 1961 or 1962 and that lasers were readily available by 1963 or 1964. The patent claims speak as of the date of issue, and on that date the laser was sufficiently known.

B

Turning now to the other defenses asserted by the defendants, we find them insufficient. The district court correctly found the Trice invention to be a valuable contribution to the art and one that fulfilled a long-felt need. The words of this court in *Colgate-Palmolive-Peet Co.* v. *Lever Bros. Co.*, 90 F.2d 178, 192 (7th Cir. 1937), *cert. denied*, 302 U.S. 729, are apt here:

> "We do not agree that the discovery is a minor one or that the patent must be given a narrow construction. Only a liberal construction of the claims will consistently recognize the character of the patent."

Having considered the record in this light and having noted the processes employed by the defendants, there being no real dispute as to the factual aspects thereof, we hold that those findings of the district court purporting to set down factual differentiations between the methods employed by the defendants and the Trice method claims as precluding infringement are clearly erroneous. In reaching this result we have not been faced with any question of credibility nor any factual dispute. Because it can be clearly ascertained from the record that infringement did occur, we find no necessity to remand for any further determination in that respect.

In Woodruff's initial operation at the Lake of the Four Seasons, Crown Point, Indiana, where Woodruff used the light beam method for laying sewer pipe, the method practiced came within the Trice claims. Subsequent operations assumed a more sophisticated hue principally in regard to the sizes and shapes of the targets. Typical of the changes was projecting the light beam on an offset basis from the central axis described in the claim. Doing so, in our opinion, accomplishes the same work

in substantially the same way. Likewise, whether the target was one that fitted snugly and tightly or was one that would roll to the flow line of the pipe being laid, at the moment of alignment the target of necessity had to be geometrically related to the pipe and its alignment. Also, the fact that the stub is aligned by means other than a light beam is nothing more than an obvious but unsuccessful effort to give an air of difference in method.

The underlying rationale of the doctrine of equivalents, which we hold to be dispositive here, was well stated by Mr. Justice Jackson in *Graver, supra,* 339 U.S. at 607, as follows:

> "But courts have also recognized that to permit imitation of a patented invention which does not copy every literal detail would be to convert the protection of the patent grant into a hollow and useless thing. Such a limitation would leave room for—indeed encourage—the unscrupulous copyist to make unimportant and insubstantial changes and substitutions in the patent which, though adding nothing, would be enough to take the copied matter outside the claim, and hence outside the reach of law. One who seeks to pirate an invention, like one who seeks to pirate a copyrighted book or play, may be expected to introduce minor variations to conceal and shelter the piracy. Outright and forthright duplication is a dull and very rare type of infringement. To prohibit no other would place the inventor at the mercy of verbalism and would be subordinating substance to form. It would deprive him of the benefit of his invention and would foster concealment rather than disclosure of inventions, which is one of the primary purposes of the patent system."

What we have said herein on the matter of infringement applies to both claims of the Trice patent.

IV

Plaintiffs cannot, however, invoke the doctrine of equivalents to its full extent if "file wrapper estoppel" is applicable, as defendants argue it is. Under that doctrine, an applicant who has

limited or modified a claim in order to avoid its rejection by the Patent Office may not later expand his claim by including the excluded matter, or its equivalents, or by omitting the limitations. *See generally Schriber-Schroth Co.* v. *Cleveland Trust Co.*, 311 U.S. 211 (1940). *See also Bishman Mfg. Co.* v. *Stewart-Warner Corp.*, 380 F.2d 336, 340 (7th Cir. 1967), *cert. denied*, 389 U.S. 897. "While equivalents may not be employed to enlarge patent claims to include areas explicitly abandoned before the Patent Office, a patent covers all devices which may fairly be called the equivalent of the ones described." *Dole Valve Co.* v. *Perfection Bar Equipment, Inc.*, 298 F. Supp. 401, 406 (N.D.Ill. 1968), *aff'd*, 419 F.2d 968 (7th Cir. 1969). 1969).

Defendants contend that plaintiffs are now foreclosed from making the broad claims that they supposedly are making in this litigation. As defendants read the history of the Trice patent, Trice withdrew claims of a scope comparable to that which plaintiffs here assert. Defendants point out that, of 18 claims originally filed, only two limited claims were accepted by the Patent Office. They rely particularly on the Patent Office's rejection of Trice's original Claim 3.[3]

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3. That claim provided:

"3. Method of laying a sectional pipeline which comprises,

(1) providing a collimated beam of light directed along the axis of the course of the pipeline to be laid,

(2) placing a pipe section approximately in said course with one end axially aligned with said light beam,

(3) temporarily unitarily associating target means with the opposite end of said pipe section,

(4) manipulating the end of the pipe section associated with said target means to bring it into axial alignment with said light beam,

(5) and fixing the pipe section in its aligned position."

Trice also proffered an amended version of Claim 3, which subsequently was cancelled:

"3. Method of laying a pipeline having a plurality of pipe sections which comprises,

The Patent Office had rejected amended Claim 3 as being unpatentable over Asbeck (a German patent) in view of Weser and Williamson (a German and an American patent). In response. Trice submitted several new claims and argued that the prior patents relied upon by the Examiner did not suggest the aligning of a plurality of pipe sections by projecting a light beam through the pipe section and fixing a target housing having a translucent screen to the end of a pipe. Subsequently, the Examiner no longer relied on the Asbeck patent but did continue the rejection on the basis of Weser in view of Williamson.

In his counterreply, Trice asserted that Weser does not disclose projecting a collimated beam of light along a selected axis nor the coupling of a target housing to the end of a tube and adjusting the housing and tube together until the center of the target is aligned with the beam.

After this final exchange of views, the Patent Office allowed the present claims in suit.

Plaintiffs read this file wrapper history as showing that the "primary point of novelty" of the Trice patent is:

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(1) providing a collimated beam of light directed along the axis of the course of the pipeline to be laid from one end of the course,

(2) placing a first pipe section approximately in said course with one end axially aligned with said light beam,

(3) temporarily unitarily associating target means with the opposite end of said first pipe section,

(4) manipulating the end of the pipe section associated with said target means to bring it into axial alignment with said light beam, and

(5) fixing the pipe section in its aligned position, and

(6) thereafter for each subsequent pipe section in sequence repeating

(7) associating said target means with the end of the pipe section corresponding to said opposite end of first pipe section,

(8) manipulating the end of the pipe section associated with said target means to bring it into axial alignment with said light beam, and

(9) fixing the pipe sections in their aligned positions."

> "the projection of a narrow collimated beam of light along a selected axis so that the pipe layer can align the pipe end-to-end, seriatim, over this beam with the light beam projected through the pipe; the aligning being accomplished by a target coupled to the end of each pipe section in a rigorous geometrical relationship to the flow line and central axis of the pipe; the actual aligning step being accomplished by moving the target and pipe together to align the crosshair of the target with the light beam."

Plaintiffs assert that this interpretation is not as broad as or broader than Trice's rejected Claim 3.

In candor, and although the plaintiffs by implication at least seem to say that Trice gave up something during the arduous term of his efforts to secure his patent, we are struck by the fact that semantically the claims in the patent as granted are basically a rephrasing of that which had been rejected. It appears to us that what in fact happened was that Trice weathered the storm on the sea of semantics and was finally successful in persuading the Examiner that that which Trice had rephrased in his final submission of claims was patentable as he probably should have been able to do on the initial effort.

Even though patent law lexicon may harbor semantical niceties of distinction, not always easily discernible, in looking at the claims in the patent as granted, we are convinced that we have not read them any more liberally than their fair intendment calls for and certainly not so as to include any aspect of the method foregone during the pursuit of the patent.

Accordingly, we reject the file wrapper estoppel contention.

V

Defendants allege that plaintiffs have misused the Trice patent, limited as it is to method, by requiring those in the pipe laying business to purchase or lease plaintiffs' equipment in order to obtain a sublicense to practice the patented method. Thus, plaintiffs are accused of attempting to extend improperly

a method patent to the unpatented apparatus needed to practice such method. The Patent Office had expressly refused to grant Trice his apparatus claims.

Alignment offers a different version of its business practices. It explains that it sells both licenses to practice the Trice method and a system of equipment which is designed to be used in conjunction with the Trice method. Because the apparatus is adapted for the Trice patented method, Alignment requires each purchaser of the apparatus to obtain a sublicense under the patent. Alignment contends, however, that it does not require a contractor to purchase the system in order to obtain a sublicense. Contractors may purchase equipment from whomever they choose, and Alignment offers sublicenses to purchasers of competitors' equipment on terms that are identical to those offered to purchasers of its own equipment. See *United States Gypsum Co.* v. *National Gypsum Co.*, 387 F.2d 799, 802 (7th Cir. 1967).

The district court rejected the defendants' contentions that Alignment has failed to follow these policies and that plaintiffs have wrongfully threatened litigation in an effort to prevent any use of laser equipment to project a light through a pipe against a target within a pipe:

> "Believing . . . that their method was being infringed, plaintiffs were not remiss in attempting to prevent use of such equipment since such equipment naturally was thought to encompass the Trice method. The letters advising sewer contractors and others of possible infringement . . . plainly refer to the Trice patent as a method patent and offer for sale a license for $3,000 to practice such method. These letters do not require or even offer for sale the Alignment equipment. We do not read Alignment's operating policy bulletins . . . as evidencing any attempt to control the sale and rental of unpatented apparatus. We are unable to find any credible evidence of patent misuse by plaintiffs."

Questions of patent misuse are for the trier of fact to determine. *Beckman Instruments, Inc.* v. *Technical Development*

Corp., 433 F.2d 55 (7th Cir. 1970), *cert. denied*, 401 U.S. 976. The evidence supports the district court's findings.[4]

We have considered the other contentions raised on this appeal by the defendants and find them to be without sufficient merit to warrant a further extension of this opinion.

Accordingly, the judgment insofar as it finds patent validity and no misuse is affirmed, but it is reversed insofar as it finds lack of infringement. The cause is remanded for further proceedings relating to damages and other relief appropriate under the circumstances and in accordance with this opinion.

A true Copy:

Teste:

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Clerk of the United States Court of Appeals for the Seventh Circuit.

4. The district court limited its determination of no misuse to the period prior to the issuance of its opinion. Because of its decision, with which we disagree, that the Trice patent claims do not encompass the use of a laser beam, it also warned that if the plaintiffs continued to demand that sewer contractors obtain a sublicense, plaintiffs would be misusing the patent. Our reversal of the court's finding of non-infringement eliminates the need for such a warning.